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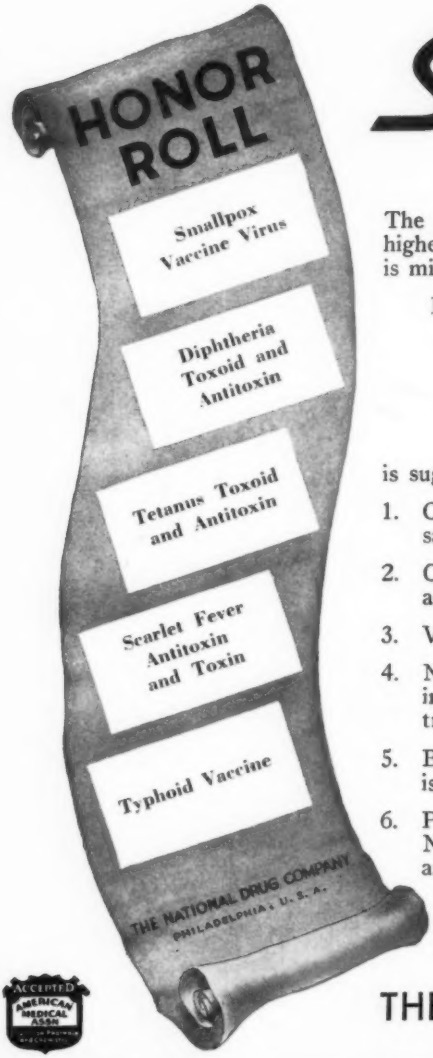

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Editorials

A Reading From Vesalius

Some time ago Doctor Samuel Lambert read a paper before the Charaka Club which dealt with the knowledge of physiology possessed by Vesalius and with the question of why he did not discover the circulation of the blood. The nineteenth chapter of the seventh book of the celebrated work of Vesalius treats exclusively of vivisection, and hence was given a new translation from the Latin by Doctor Lambert and several scholastic colleagues, with comments following, in order to make as clear as possible just what Vesalius knew of physiology. The various pioneers who figure in the history of the circulation of the blood were duly discussed and the value of their contributions appraised. This paper was printed in the *Proceedings of the Charaka Club* (Vol. VIII, February, 1935).

Most modern physicians' acquaintance with Vesalius is limited to the beautiful illustrations by Jan Stephan van Calcar, gifted pupil of Titian. This English text of Doctor Lambert now affords additional pleasure and edification.

Doctor Lambert has since reprinted this paper in the *Bulletin of the New York Academy of Medicine* [12:346 (June) 1936]. A note appended to the reprinted paper runs as follows:

> The republication of this paper so soon after its appearance in the Proceedings of the Charaka Club seems advisable to the author, in order that a basic error may be corrected. It is believed that sufficient credit was not given to Caesalpinus in the original publication. This was due to the impossibility to consult in New York City the original book of Caesalpinus of 1583, "De Plantis." A corrected statement of the claims of Andreas Caesalpinus as a discoverer, as now understood by the author, is presented in this version.

The degree of credit now given to Cesalpinus—exasperating *enfant terrible* to all right-thinking historians writing reverently in the sacred English tradition— by Doctor Lambert may be gauged in the following passage:

> Vesalius and his proof of the impermeability of the cardiac septum, Servetus and his correct description of the pulmonary circulation, Columbus and his "rediscovery" and correct reiteration of the discovery of Servetus, Caesalpinus and his demonstrations of the centrifugal flow in arteries and the centripetal flow in veins and the correct description of the flow of blood through the heart, and Fabricius with his valves in the veins, all failed to formulate the one important fact that the whole blood flowed in two circles, a shorter through the lungs, and a longer through the rest of the body. They failed because they could not see or feel the connecting vessels between the arterial and venous trunks, and would not abandon the humoral physiology and the theory of suction by pulsation of Galen and other predecessors who had assumed the existence of invisible channels between the arteries and veins, but who had viewed this flow of blood as pathological and to be from veins to arteries, and thus to form a prominent cause of disease.

But it is to be remembered that Harvey also "could not see or feel the connecting vessels between the arterial and venous trunks," for he, as well, lacked a microscope. The discovery of the capillaries was reserved for Malpighi. As a matter of fact Cesalpinus's hypothesis of "thread-like or hair-like vessels" was a nearer approach to the truth than Harvey's crude assumption of porosities or interstices. As to being hampered by the older physiology, Cesalpinus, according to Sir Michael Foster (*Lectures on the History of Physiology During the Sixteenth, Seventeenth and Eighteenth Centuries*), "in all that related to medicine early took up an attitude of opposition to Galen, carrying it almost to the extent of maintaining that whatever Galen affirmed was wrong, and that whatever Galen opposed was right." Sir Michael, before quoting from the convincing Peripatetic Questions of Cesalpinus, says that "he seemed to have hold of several points relating to the *true action* [italics ours] of the heart," and after the illustrative quotation Sir Michael remarks that "he thus appears to have grasped the important truth, hidden, it would seem, from all before him, that the heart, at its systole, discharges its contents into the aorta (and pulmonary artery) and at its diastole receives blood from the vena cava (and pulmonary vein)."

"Again," says Sir Michael, "in his Medical Questions he seems to have grasped the facts of the flow from the arteries to the veins, and of the flow along the veins to the heart. . . . We must therefore admit that Cesalpinus had not only clearly grasped the pulmonary circulation, but had also laid hold of the systemic circulation; he recognized that the flow of blood to the tissues took place by the arteries and by the arteries alone, and that the return of the blood from the tissues took place by the veins and not by the arteries. . . . In respect to these important points, he had obviously freed himself from the Galenic doctrine."

There is great significance for us (and a degree of unintended humor) in the fact that all of the foregoing admissions are made by Sir Michael, an Englishman, in announcing his submission to the orthodox and conventional decree: "Thou shalt have no gods other than Harvey!"

Cesalpinus, while repudiating Galen and all his works, adhered to Aristotelianism and medieval mysticism; but so, equally, did Harvey, so that point "against" Cesalpinus takes us nowhere. Aristotle had taught "that the function of the lungs consisted in refreshing the blood, and that this organ, in which the blood was again made spirituous and thin, was nourished by the thick blood flowing back from all the organs." Both floundered as to the real uses of the circulation; oxygenation, primary and secondary assimilation, metabolism and the places of blood formation were dark arcana.

This writer wishes to enter a demurrer against Doctor Lambert's affirmation that Cesalpinus "failed to formulate the one important fact that the whole blood flowed in two circles, a shorter through the lungs, and a longer through the rest of the body." That is exactly what Cesalpinus did formulate.

Since Doctor Lambert has recently added a copy of the De Plantis of Cesalpinus to the other works of that author in the possession of the New York Academy of Medicine, and since he has gathered about him a group of accomplished Latinists, it would be a gracious and logical act on his part to provide us with complete translations from the three works of Cesalpinus covering all moot points, just as he has given us the admirable translation "A Reading from Vesalius and the Physiology of Vesalius." This is merely a suggestion in the interest of scholarship and truth, not in any sense a challenge.

Congressional Funds Imperatively Needed for the Army Medical Library's Book and Periodical Collection and Index-Catalogue

The proper upkeep of the Army Medical Library does not concern merely military surgeons. It concerns the entire medical profession. It concerns, indeed, the health and care of the Nation. It is the literary power house of the profession, a super-TVA wherefrom flow currents which continuously recharge the intellectual batteries that "service" every hospital, every medical group, every medical publication, and every community in the land in need of a high order of medical care—and what community does not need such care?

The science of medicine has a vast literature that is all its own. The most complete collection of this literature in the world is contained in the Library of the Surgeon-General's Office of our War Department in Washington. This Library recently observed the one hundredth anniversary of its existence. Its growth and development were largely due to the efforts of the late Dr. John Shaw Billings. It was he who envisaged the idea of the need of a comprehensive catalogue of the vast material contained in that library. The outgrowth of that idea was the birth of the "Index-Catalogue of the Library of the Surgeon-General's Office," the most inclusive piece of bibliography ever attempted in any field of knowledge.

While Congressional funds have been spent lavishly of recent years upon Federal projects galore, the Library appropriations have been inadequate and a shocking situation now confronts us. For the huge mass of material contained in medical publications would be lost to the medical research worker, practicing physician, and surgeon, or be most difficult to find, were it not for this key to medical literature. The Surgeon-General's Library and its "Index-Catalogue" are the two outstanding contributions which our Government has made and is making to medical knowledge.

The "Index-Catalogue" is an alphabetical index of authors and subjects. Prior to this year, a volume has been is-

sued annually. The alphabet has been covered three times in three different series totalling forty-seven volumes. The first volume in the fourth series has just appeared after a delay of three years! This delay has been due to lack of provision on the part of Congress of funds for the continuation of the publication of a volume annually. The comprehensiveness of this "Index" is dependent upon the completeness of the files of medical publications in the Surgeon-General's Library. Because of grossly inadequate appropriations by Congress during the years 1933, 1934 and 1935, practically no new books published in foreign countries were purchased and many produced even in this country were not acquired. The limited funds allotted were used in continuing the subscriptions to periodicals, in which curtailment was also necessary. The seriousness of this situation occasioned an important step at the recent annual meeting in Minnesota of the Medical Library Association, a national organization. The Association adopted a resolution urging the Congress to appropriate annually for the Library of the Surgeon-General's Office an adequate sum wherewith to purchase current medical books, periodicals and back publications lost during those recent years during which the amounts granted were grossly insufficient, and in addition an annual sum sufficient to defray the cost of printing regularly each year not less than one volume of the "Index-Catalogue."

All medical groups and individuals are urged to impress this matter upon our Government officials and Congressmen at the coming season of Congress convening early in January.

—C. F.

Mild Coronary Occlusion

There are many cases of mild coronary occlusion in which the patient is not able to remain in bed for any length of time. This applies to the family man who cannot stop work because of his loss of income. No doubt many patients of this type are able to return to work in two or three days after the attack and have no further trouble.

Howard (*Northwest Medicine*, 32:385, Sept., 1933) states that the "instantaneous death" of coronary occlusion is rarer than formerly presumed. Most patients have symptoms for several days preceding the attack. This observer feels that the prognosis of milder attacks is usually good, provided complete rest for an adequate period is insisted upon. Leukocytosis and fever clinch the diagnosis. While the rest period of five or six weeks in bed is quite necessary even in the milder cases, there can be no question that many patients "get by" with about ten day's rest and never have any recurrence of the trouble. In fact, there is no alternative for many of these patients.

—M. W. T.

The Life Extension Institute Changes Its Methods

According to the terms of an agreement reached by the State Department of Education, the Attorney General's office, a Court referee, and the Life Extension Institute, the last-named organization will henceforth desist from making any physical examinations. It will do laboratory work for physicians and carry on educational activities having to do with life extension. It must not practice medicine.

This manner of ending an old controversy meets with our approval. The avoidance of litigation is creditable to all the parties involved in the agreement. It is a pity that this happy solution could not have been reached long ago. Civilization must be advancing.

Units of Power

The general practitioner who substituted cod liver oil capsules for sandalwood capsules in the treatment of gonorrhea seems to us to have displayed a talent for therapeusis not far short of genius. In scientific terms he revealed a specialist-power of 10.

Both Insane and Amoral

"We have eliminated certain disease plagues," says Dr. Iago Galdston, "but in their stead we have created others—unemployment, monotonous work, crowded cities, nasty industrial towns, devitalized, synthetic foods, 'Ersatz' nurture for the mind and spirit, speed, noise, dust, fumes, the mania of success—in a word, the most insane of insane worlds. . . . The Four Horsemen of the Apocalypse are virtual realities today, flying in tri-motored transports, capable of raining brimstone and fire on London, Paris, Berlin, New York,

Washington, San Francisco and Chicago. . . . The scientists have gone on in the quest of truth, so-called, caring never a fig for the human consequences, because at rock bottom science is amoral, devoid of ethics, and not concerned with the good, the true or the beautiful of Socrates or of Jesus."

What is Dr. Galdston's conclusion?

"Where science ceases, we must use as best we can those fainter powers of apprehension and surmise and sensitiveness by which most high truth has been reached as well as most high art and poetry."

But so long as the elimination of one plague is followed by the introduction of several others just as good what is the use of prating about an abstract "high truth"? The posture serves the purpose of Dr. Galdston's prose poetry but it is otherwise dubious.

The *plain* truth seems to lie in a line quoted in the first paragraph of this editorial—*the most insane of insane worlds.* Dr. Galdston might just as well stick exclusively to that.

We of the medical profession have long harbored a belief in human evolution and progress. Has it been a fatuous belief? We have developed a philosophy which takes for granted that social and medical effort is worth while. But now, at the same time that one school of biologists is telling us that humankind is increasingly decadent and degenerate, we are confronted by forces which are manifestly seeking to level the whole people economically and socially. These things do seem to jibe. Must we expect to see a new philosophy in furtive vogue, taking realistically for granted that the human family is just about what Dean Swift said it was, with cynical and hypocritical uplifters proceeding accordingly, under governmental auspices, to regiment and socialize it upon a low plane, as befits its allegedly low character.

Swift, by the way, has not been loved much by people who have a sentimental faith in the human family. It will be a curious turn of events that will install his works, *sub rosa*, as the real Bible whereby human affairs shall be directed.

Thoughts On the "Inevitable"

It is interesting to encounter now and then some such statement as "It is inevitable that sooner or later the practice of medicine will have to be nationalized," following which the writer or speaker makes a plea for more intensive organization of medical society units so as better to plan and control the setting up of a nationalized system. There is a charming *naïveté* about this type of appeal, since there would be no use for organized medicine in the present sense on the part of a more or less totalitarian State.

When medicine is nationalized it will "inevitably" be politicalized and our idealistic planners will be too busy practicing a degraded type of medicine to need county medical societies (or any other kind), if indeed they are permitted to have them. The societies will wane in importance and in functional usefulness exactly in proportion to the advance of socialization.

The Accident Toll—A Wish Fulfilment

There is no reason why the number of automobile accidents should not increase enormously. We suggest a Society for the Promotion of Automobile Accidents in America. Although it would seem that very much is being done at present to insure a large number of accidents, we are sure that organized effort would raise the rate notably. A Woman's Auxiliary would intensify the upbringing of the young in the way that they should go upon the road toward accidents. A Junior Society for the Promotion of Accidents would also be in order, after the Boy-Scout and Campfire-Girl fashion. We must become less reticent about the joy that we get out of accidents. That joy is closely akin to the anticipatory thrill that the circus performer provides, and to the kick with which one watches a football game, or a prizefight, or a horse-race — which always threaten tragedy. When someone is hurt the day reaches a glorious climax. As we aggravate traffic dangers at all points the accidents that we desire increase *pari passu*. We must stop pretending that we do not possess this desire.

Life is less dull when tragedy stalks abroad. When and where will the next skull be fractured? It is an adventure to walk or drive abroad any day. We must step up the fractured-skull rate, for only 112,000 cases of this type of injury are now occurring annually, according to Dr. Temple Fay, of Philadelphia—a wretched record.

The number of children that we are killing—a matter especially near to our hearts—is nothing at all to brag about. It

—Concluded on page 552

A SYMPOSIUM ON *Sinus Disease*

RIDPATH • WOOD • ZWERLING

RELATION OF DISEASES OF THE SINUSES TO ORGANIC DISEASES

ROBERT F. RIDPATH, M.D., Sc.D., F.A.C.S.
Philadelphia, Pa.

WHEN assigned the topic, and later thinking of the subject of this offering, I realized the voluminous amount of material already compiled and publicized by the various repositories at our disposal. Nevertheless, despite Dr. Crile's insistence that repetition and repetition must be considered inevitable in any subject due to the different audiences and also because of the different angles given the subject by various men working in the particular field, I decided to set aside all compilations published and give you here today my own personal impressions and experiences.

Focal Infection

The concept of focal infection has been responsible for the patterns of thought in modern otolaryngology in which the emphasis is upon the fact that the upper respiratory tract and the ear are not isolated structures; that they are part of the organic whole; that the specialty of otolaryngology involves a thorough-going knowledge of general medicine. This has led away from the tendency toward narrow specialism.

Clinical evidence in support of this theory as developed by Billings is monumental in size. There is a dearth of material of an experimental nature to demonstrate the actual mechanics of the phenomena of focal infection from the standpoint of histopathology, bacteriology, biochemistry and biophysics.

Beginning often in early childhood the insidious trail of upper respiratory tract infection may be traced through the lives of its victims—lowered efficiency; moral, mental and physical degeneracy; chronic invalidism and even an untimely end are too often the results.

Absorption of bacteria into the blood and lymph vessels of the mucosa lining the sinuses takes place and so infection in remote parts of the body occurs.

Hematogenous infection occurs when the infective material drops down from the postnasal areas into the trachea and esophagus.

Secondary infections may occur anywhere in the body. The recovery of the identical organism with those in the sinuses or nasal chambers has been demonstrated time and time again.

Acute or chronic sinus infections may act as foci of infection. Bacterial invasion of the blood or lymph streams from a primary focus of infection such as the sinuses may produce a fulminative infection in the form of a bacteriemia, with multiple localized infections due both to the high degree of virulence of the organisms and the general lack of resistance of the tissues against the infection. Metastasis to special tissue, dependent on the factors governing the dissemination of the secondary localization of the bacteria, may produce acute local inflammatory reaction.

Diagnosis

Many aids with which we are all familiar must be used in the study of these infections. It is not sufficient to be satisfied with the macroscopic and cytologic examinations. These should and must be augmented by a blood investigation in all

Read before the Interstate Postgraduate Medical Association of North America, St. Paul, Minnesota, October 14, 1936.

From the Rhinolaryngological Clinic of The Temple University Hospital.

its phases and a thorough bacteriologic study of any and all secretion or discharge from the various parts of the ear, nose and throat. Many occasions will also occur when the spinal fluid contents as well as pressure must be considered. The x-ray is always of value, not only from its possible aid in diagnosis but more frequently because of the visualization of the anatomical relationship as seen by the shadows. Aid should be asked from the ophthalmologist for eyeground readings and pressure valuations. Neurological findings are of great value.

A thorough history from all standpoints must be taken, this to include the family history, maternally and paternally. Heredity, I believe, is a decisive factor in upper respiratory infections. In innumerable instances I have observed sinusitis in every member of the family and occasionally in every member of two generations. Whether this can be accounted for by inherited lack of immunity or by contiguity plus some specific or unknown infection will at some later date be determined. Inherited lack of immunity might explain its frequent appearance in infancy.

Complications

Orbital complications arising in the train of acute sinus disease are factors that require urgent attention. I have had patients in whom blindness occurred suddenly, either complete or unilateral. Unilateral eye involvement is very significant of a focal cause. Bilateral involvement points more to a general, usually a metabolic cause. In two of my cases, blindness took place at night and both cases were doctors. The immediate opening of the right sphenoid in one case (Dr. G.) within one-half hour resulted in the preservation of his vision and his ability to read the figures on a calender 16 feet away half an hour after opening the sphenoid sinus. Polyopia and diplopia have been frequent visitors in postethmoid and sphenoid infections.

Enlargement of the blind spot is a more or less frequent factor found. Orbital abscess, the result of foci in the nasal chamber, is easily traceable to the anatomical relationship of these structures. Starting as an attack of acute rhinitis, extension either direct or by blood stream through the smaller venules takes place, the soft tissue around the orbit quickly changing to an orbital cellulitis and then to the typical orbital abscess. The process takes a definitely quicker turn should a dehiscence be present. I feel that orbital complications more frequently occur from acute involvement of the sinuses, whereas ocular complications are more apt to result from the chronic or concealed type of infection in which we have very little evident discharge. Many sphenoids have been opened by me in which no pathology macroscopically could be demonstrated and yet all the subjective symptoms pointed to the sphenoidal area. Two surprises await one in these cases: the first, that following the opening of the sphenoid no demonstratable pus is seen, and the second, that there is an almost immediate relief and cessation of all symptoms. This has occurred so frequently with me that in a paper on sphenoid symptoms read in Atlantic City before the American Laryngological, Rhinological and Otological Society in 1927 I included it in the text. An explanation of this most virulent type may be that there is a closure of the ostium with an anaerobic infection. The admittance of air into the cavity essentially relieves the vacuum, giving immediate relief.

General Relations

If we visualize our field of research along the trail of sinus infections we enter the domain of medicine and surgery in practically all its departments. The gastro-intestinal tract from its oral opening to the rectum and anus may and does feel the effects of chronic sinus infections. I have no doubt in my own mind that my own appendicitis was the result of a sinus infection, and I recall vividly the lump of infectious material which, due to strenuous horseback riding, slipped down into my esophagus. Three days later I was operated on. The appendix the surgeon claimed was mine was one of the worst looking things I have ever seen. I didn't claim it or in fact wouldn't recognize it.

We usually consider intestinal infections arising from sinus infections as involving (1) the appendix, (2) the gallbladder, and (3) the kidney. It is true, however, that we can have a chronic gastritis, gastric and duodenal ulcer, infected Peyer's patches, pancreatitis and many other conditions. All of these we have seen and we feel that the clinician and surgeon should have a careful and thorough examination of the upper respiratory tract made whenever a question of

the invading organism or cause of the condition is clouded.

The intimate relationship between lung conditions and sinus disease has resulted in a reclassification of lung pathology. Bronchitis and bronchiectasis are frequently secondary to infections of the sinuses. Infectious material by gravitation drops into the larynx and lower bronchial tree, reaching in many instances the alveoli. The lower respiratory tract may also be invaded by way of the blood and lymph channels, primarily infected from the sinuses. In the so-called chronic tuberculosis with negative sputum the basic cause can often be traced to a chronic sinusitis, perhaps existent from childhood. We have frequently seen a chronic maxillary sinus give the typical picture of tuberculosis, cough, night sweats, debility, emaciation and rise of temperature all being present. The clearing up of the infected sinus would be followed by alleviation of all the symptoms and recovery of the patient.

Selected types of asthma yield to sinus treatment. Mr. G., a noted photographer, suffered from asthmatic attacks. These were of such a pronounced nature that they incapacitated him from doing any work for weeks at a time. On examination a small amount of viscid pus was seen in the inferior meatus and upon lavage of his right antrum thick, heavy pus was found. Within a half hour he was entirely relieved and comfortable, and after a comparatively few treatments of similar nature was declared well. This occurred five years ago and no return of the condition has been noted by him since. I simply mention this case as one of many that have come under my observation. Some cases of this most unpleasant and frightening malady are traceable to polyp formation in the sinuses or within the nasal chamber. To treat patients suffering from asthma without a thorough upper respiratory examination is utter folly. Please do not understand me as expressing the thought that this or any other condition or disease mentioned in this presentation is essentially always of sinus origin. That would be just as great a mistake or folly as for you not to consider the sinuses as one of the possible factors in each patient. Latent sinusitis is subject to exacerbations known as acute colds, rhinitis, coryza, and low grade influenza, and is accompanied by toxic symptoms. It is during such periods that further infection is liable to start. In some instances these exacerbations may be so slight that the patient is scarcely aware of them. This latency may result in the underlying factor being overlooked and unless a competent rhinologist is called in and a thorough sinus examination made the condition goes from bad to worse, in all probability with a serious sequela.

Acute and chronic infectious arthritis may occur from low grade infections of the sinuses. A hematogenous infection is the usual route by which the joint (or joints) is reached. The type of pathology seen in the joints is due to the bacterium itself, and any metabolic changes are in all probability secondary manifestations. Relief and elimination of the infection, with healing, has been noted by many workers including myself, when the focus was found in a sinus. My experience has been that should the upper respiratory tract be at fault, the maxillary sinuses are those from which absorption mostly tends towards this particular condition. I feel that the sinuses have not been given the place they merit in the etiology of arthritis, being overshadowed by the tonsils, teeth, and the intestinal tract. We are very cognizant that tonsillar involvement of lon gstanding almost invariably begets chronic sinusitis. This may be the explanation for some of the failures to cure various toxemias, and infections such as arthritis, by tonsillectomy. On'y part of the infection has been considered or removed.

Due to bacterial infection of the lymph nodes with resultant hyperemia and exudation, cervical lymphadenitis results. Although we see this condition as a frequent manifestation in many of the exanthemata, many cases, if not all, are the result of the invading organism attacking the mucosa of the sinuses with resultant adenitis. Should the invading organism be of the so-called low grade virulence the lymph nodes may then act as secondary foci of infection.

Acute or chronic pericarditis from infection of the sinuses has been noted by many workers along these lines, or it may be a sequela of an embolic spread of endocarditis from sinus infection.

Myocarditis may be due to the effects of toxins or arise from local effects of the invading organisms themselves.

Although chorea has been recognized as

of bacterial origin, I have not seen any cases that could be definitely traced to the sinuses, but have seen many cases due to tonsillar infections.

Many reflex signs and symptoms are noted associated with upper respiratory infections such as sneezing, coughing, vomiting, pain, hoarseness, snoring, vertigo and tinnitus aurium. All of these may occur in violent paroxysms, or may be mild but continuous, often exhausting the individual.

Infections of the nervous tract are of special interest. Due in all probability to changes in the nerve cells and fibers caused by bacterial emboli in the terminal blood vessels, causing interference with the blood supply, and by the action of the bacterial endotoxins, invasion of the spinal cord by hematogenous bacterial infection may be the cause of myelitis.

Invasion of the posterior ganglia with their nerve trunks has been definitely traced as a cause of herpes and other skin manifestations of like nature.

Osteomyelitis of the frontal and maxillary bones is seen all too frequently as a sequela to sinus involvement. Many cases involving the whole frontal plate, reaching almost to the midline or vortex, have been operated upon by me. With few exceptions—if any—this would not have occurred if the diagnosis of a possible sinus infection had been made early enough.

Meningitis of nasal origin is a very serious condition. I have seen only one recovery. I am speaking of a true meningitis. We frequently have meningeal irritation or so-called meningismus, cases of which recover, but to repeat, a true meningitis of nasal origin is a very serious condition and, in spite of any and all treatment in my hands, is, with the exception of the case quoted, one hundred per cent fatal.

Anatomical Considerations

There are really three factors, anatomically, to be considered in the rapid termination of these cases with regard to the tract of the infection. First that bearing upon infection of the ethmoid labyrinth. The olfactory nerve, entering the nasal cavity through the cribriform plate of the ethmoid bone, is protected to this point by its sheath, but when the nerve filaments divide and ramify through the mucous membrane the sheath is left open, hence the ease with which, by the simple process of capillary attraction, infectious material may travel to the meninges.

The second anatomical factor lies in the fact of the thinness of the posterior plate of the frontal bone. This is not only thin but perforated by innumerable minute openings through which the lymphatics of the meninges ramify to be distributed to the mucous membrane lining the ethmoidal cavity. A virulent involvement of this cavity with a fulminating type of infection, especially when pressure of a decided nature is present, can very easily travel either directly or by the lymphatic channels to the meninges.

The third factor lies in the position and intimate relationship of the sphenoid sinus to the cranial cavity. This normal intimacy is, through the increased development of the sinus by the reabsorption of the bone which takes place throughout life, brought into closer relation with many vital areas by dehiscence.

1737 CHESTNUT STREET.

THE PRESENT STATUS OF NASAL and SINUS DISEASE IN RELATION TO GENERAL PRACTICE

THOMAS B. WOOD, M.D., F.A.C.S.
Brooklyn, N. Y.

SO MUCH work, clinical as well as research, has been done in the past decade in this branch of medical science that it is almost impossible for the specialist, much less the practitioner, to keep abreast of the literature. It is for that reason that I have perused as much of the recent literature (from 1934 to date) as I possibly could in order to pick out for your information only that which is of interest. I make no claim for any originality in this paper. No specialist can successfully treat or diagnose without some general knowledge and no general man can be successful without a fair knowledge of the specialties. After all, the human body

must be considered as a whole—not just as a nose or sinus—and this means that there must be the closest cooperation between medicine and all its branches in order to give the patient the fullest benefit.

It is interesting to note that the favorite topic of the rhinologist at present is not infection or surgery but research and clinical work on allergy, vasomotor conditions, physiology of the mucosa, iontophoresis, neurology, experimental pathology, therepeutic research and anatomical investigation. Following this is conservative medical and surgical treatment, and lastly radical surgery. Then come case reports on many interesting conditions such as fractures, new growths, malignancies, foreign bodies, endocrine disturbances associated with nasal sinus conditions, and various other rarer occurrences.

In looking through this mass of literature I will not burden you with quotations from authors or even quote references. I feel that you will gain more valuable information if I give you the consensus of opinion rather than any individual's work. Thus modern medicine advances on the mass of information rather than on any individual's observation.

On allergy concerning the nose and paranasal sinuses, many good and authoritative books have been written in the past two and a half years. I strongly advise every doctor to place one of these recent works on his library shelf. It will be invaluable for reference and will help him over many a stumbling block in studying case reports and conclusions on this topic.

Anatomic and Physiologic Research

The research in anatomy and pathological anatomy has been mostly histological in character. These studies have been confined to the structure of the mucosa, the vascular system and the nervous system of the nose and paranasal sinuses. Our medical knowledge and understanding have been definitely enriched and some of our old ideas have been thrown into the discard in the light of new discoveries.

Anatomists are the first to give an adequate discription of the histological features of these organs—although numerous investigators, mostly rhinologists, have previously written on this topic. In the maxillary and sphenoid sinuses the epithelium is found to be of the thin columnar ciliated type overlying a thin connective tissue stroma. Some epithelium, however, does show a relative number of undifferentiated basal cells and either no or few goblet cells are seen. All surface cells are ciliated. Under conditions of acute inflammation, the basal cells, through their more rapid growth, bring about a hyperplasia of the epithelium with little or no increase of the goblet cells. This hyperplasia sometimes continues until a true stratified epithelium results, with the infiltration of numerous macrophages, polymorphonuclear leucocytes and lymphocytes giving evidence of acute inflammation.

On the other hand, in the ethmoid cells, in which hyperplasia is evident, large numbers of goblet cells are found in the superficial layer. Ciliated cells become compressed and spread out to clothe a larger area with cilia. Sometimes the entire surface is covered with goblet cells. The origin of these cells was generally considered, formerly, to be from the undifferentiated basal cells, but recent observation seems to indicate that ciliated cells may also thus be changed. These cells disintegrate when their mucin is discharged and new cells are being continually restored to the mucosa by the columnar ciliated as well as by the basal cells.

The frontal sinus epithelium rarely exhibits any great number of goblet cells. Mucoid degeneration is seen mostly in the ethmoid region, only occasionally in the frontal and maxillary, and rarely in the sphenoid. Regeneration of epithelium readily occurs because the basal membrane, which contains the irregularly cuboidal cells, from which both goblet and ciliated have origin, is not usually involved in any sloughing process.

The cilia of all the sinuses sweep toward their ostia while the cilia of the nasal mucosa sweep toward the nasopharynx, whither the bacteria and dust-laden mucus are carried for physiologic disposal. Only when there is an excess of discharge in the nose will it appear at the anterior nares, and then only when the head is held forward or when the action of the cilia is inhibited. Any drug, with the exception of normal saline,

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when placed in the nose interferes with normal cilia action.

This suggests the physiologic technique of blowing the nose. Observe any child who has not been instructed in parlor manners by proud parents and you will notice that he always uses nature's method. He does not try to blow out the offending material by positive pressure but rather he draws it backward into the nasopharynx by gentle suction. Any excess at the anterior nares is wiped away, without blowing, either on a handkerchief or coat sleeve. Most sinus infection is brought about by forcibly blowing the infectious material from the nose proper, where the tissue resistance is high and nature's defense mechanism strong, into the sinuses, where the defense mechanism is weak and tissue resistance low. A large percentage of middle-ear disease is brought about in the same manner. I personally doubt very much whether any filtrable virus (common cold, influenzal or other variety) would have a predilection for the sinuses if the patient refrained from blowing his nose during the onset of an attack. So re-educate yourselves and teach your patients to sniff it back. Mucus, saliva, gastric juice and intestinal juices are antiseptic and are working with you in their defense of the body against infection. Worse things than sniffing, such as burping and bronx cheers, have been made popular in the best social circles.

Micro-anatomists as well as neurological and rhinological research workers frequently publish papers on the innervation of the nasal mucosa. In order to explain referred pain and the trigger mechanism, many interpretations have, in the past, been placed on the function of the autonomic nerves. However, it is now found in a study of the sphenopalatine ganglion, by means of microscopical preparations, that the more minute anatomic relationship of the nerves can be demonstrated. No morphologic evidence can be found which will support the old established assumption that the autonomic system, particularly certain cranial ganglion cells, play a rôle in afferent or sensory conduction. The autonomic cells, which closely resemble sensory ganglion cells, in the sphenopalatine and ciliary ganglia are so few in number that they could hardly form important sensory centers. Even the unipolar and bipolar cells exhibit numerous minute multipolar processes and are now regarded as multipolar. The sensory functions usually attributed to one or the other ganglion are due to the sensory fibers that run through it and the sensory nerves with which it is connected. It is unique in that it is associated anatomically with fibres from the semilunar ganglion of the Vth cranial nerve and the geniculate ganglion of the VIIth. Some of the afferent fibers of the vagus and upper thoracic nerves, which ascend in the plexuses of the carotid arteries, also traverse it and reach the nasal mucosa by way of the nerves connected with it.

The cells of the cranial autonomic ganglia constitute the final links in efferent pathways and are themselves functionally efferent. The nerve fibers arising from the ganglia multipolar cells are nonmyelinated, parasympathetic, efferent nerves, while the myelinated, sympathetic, afferent fibers pass directly through the ganglia. Thus the lateral nasal and nasopalatine nerves carrying fibers from the sphenopalatine are made up of myelinated and unmyelinated fibers. The myelinated are sensory and traverse it while the unmyelinated are in part parasympathetic and arise in the ganglion. Thus, having a more minute knowledge of this anatomical relationship, we can more clearly interpret symptoms such as Sluder's syndrome and other vague neuralgias of the head, scalp, neck, throat and body, as well as certain chest symptoms, such as asthma or unexplained bronchospasm.

Now let us try to understand the physiology of the erection of the tissues in the nose with the concomitant production of nasal discharge. Let me explain the vascular system. The arterial system of the mucous lining of the nasal passages consists of two interconnected and intricately interlaced networks, with marked elasticity of the perivascular tissues. One network consists of numerous, thin-walled, very inflatable, vein-like arteries which do not give rise to arteriocapillary or venous anastomoses. The other network consists of numerous slender vessels which are more like typical arteries elsewhere in the body. These arterioles give rise to numerous arteriocapillary anastomoses. There are no anastomoses between these two networks, but where they cross the relationship is so close that pseudo-

arteriovenous anastomoses have been spoken of. True arteriovenous anastomosis has not been found between these two systems in the erectile tissue of the nose. At the point of crossing or at the site of the pseudo-arteriovenous anastomoses, the blood in one system is trapped by an increase in the pressure of blood in the other system; that is, these arteries, when inflated, compress the veins that pass underneath or above them, so that a considerable amount of venous blood is trapped in these easily dilatable veins, causing erection to take place. When the vein-like arteries and venous traps are inflated, causing erection of the mucous lining, fluid which is already in the perivascular tissue is driven out into the nasal passages as a viscous discharge. This viscous discharge is soon followed by a watery one, according to the variation of the intravascular pressure. The greater the pressure the more water is squeezed through the walls of the bloodvessels.

The mechanism of these systems, the epithelial, the vascular and the nervous, acts somewhat as follows under abnormal or pathologic stimulation. The parasympathetic nerves, being efferent, do not conduct pain sensation but carry only undifferentiated stimuli. The autonomic system is not considered essential to life, as has been proven by laboratory experiments on animals. It does, however, preside over the defense mechanism of the body. Its influence over the blood vascular system in the nose and elsewhere in the body is pronounced in giving warning of danger ahead. Clinical and experimental data prove that reflex responses produced by stimulating afferent (sympathetic fibers at the site of a lesion results in the stimulation of the pain receptors in that area. These sympathetic fibers, through their grey rami, join the parasympathetic (efferent) fibers which have their origin in the autonomic ganglion cells. Thus part of the stimulus is referred or shunted to the ganglion cell, which then sends the stimulus to the periphery in another area, causing a pain sensation to be sent back from the receptors in this foreign area. The conscious mind then records the pain as existing in the referred area instead of at the site of the lesion. Autonomic centers, such as the geniculate ganglion, the ciliary ganglion, the semilunar ganglion, the sphenopalatine ganglion, the carotid sinus node, the ganglia along the carotid and internal carotid sheath and many small ganglia along the cervical and thoracic segments of the cord are all interconnected, sending neurones to all the viscera as well as to the peripheral receptors of the sympathetic in the skin. Even the brain itself contains autonomic ganglion cells, so that pain or parasympathetic stimulation from the viscera is often psychogenic. This is often the reason why we diagnose a case as hysteria or hypochondriasis when we cannot find the lesion.

The autonomic system also plays a rôle or depicts an effect in the acid-base balance of the body. Some authors (rhinologists) claim that when they look into a nose and see an intensely red, dry mucosa the diagnosis is acidosis, and if the mucosa is pale, wet and boggy, the pH tends towards a lower level and is associated with allergic manifestations, which respond to an acid-ash diet.

The Allergic Factor

We all know that allergic disease, an altered reactivity in the body, is fundamental in the individual, that it is a general disease affecting all the tissues of the body, and that it manifests itself in many organs, but nowhere so frequently as in the nose and sinuses. This is where it is most generally overlooked.

The rhinologist in his search for a focus of infection often sees only the associated states in the sinuses and fails to record the allergic mechanism underlying them. The entire profession is still over-impressed with the validity of the focal infection theory. After many years of experience with surgical attacks on the sinuses without results, we do well to now pause and inquire into the real nature of the pathology of these cases of so-called sinusitis and their relation to some of the associated pathological states. For instance, a patient is often referred for examination of the sinuses as a possible focus of infection in asthma, and all the rhinologist can find is the nasal manifestation of allergy, which is a general problem and not necessarily the source of the patient's allergy. Or it may be to find the causes of certain types of headache, frontal, occipital or migrainous, and again it may be some associated skin or gastro-intestinal condition. These examples may be multiplied many times but

are sufficient to show how lacking we are in knowledge of modern research.

It is found by various men of wide clinical experience that more than one-fourth, nearer one-third, of all patients coming to them with nasal complaints really suffer from some form of nasal sinus allergy and over thirty-five per cent of these are associated with allergic manifestations elsewhere in the body. The Mayo Clinic reports four hundred cases studied without finding evidence of focal infection in a single one.

The outstanding point in the nasal diagnosis of allergy is the paleness of the mucosa with edema, more marked in chronic cases but present in all. The presence of polypi in the ethmoid or antral region adds to the picture. In differential diagnosis, tuberculosis, atrophic rhinitis, new growths causing pressure, and certain mechanical or chemical irritants must be ruled out. The x-ray findings vary all the way from haziness or slight thickening to extreme density, where the cavity is completely filled with edematous mucosa. The use of contrast media, after the method of Proetz, often is of great value. The radiograph will also show any superimposed infection by demonstration of a fluid level as well as any osteitis such as bone softening or absorption. Additional data of diagnostic value are found in the cytology of the nasal secretions. Invariably an increase in eosinophiles is found. Often eosinophilia is found in other conditions, but when there is a marked increase allergy is indicated. The microscope will also help differentiate acute suppurative and chronic suppurative sinusitis from allergic sinus disease. The cell count shows increased neutrophils (polymorphonuclears) in acute infection and small mononuclears in chronic infection. The normal nasal secretions usually contain only a few round cells and an occasional plasma cell or eosinophil. Therefore the presence of eosinophils in large numbers is certainly diagnostic of allergy. The histologic study or biopsy of the nasal mucous membrane is of extreme value. It will show a boggy, edematous, eosinophil-infiltrated membrane in allergy, an acutely inflamed membrane in acute infection, a chronically inflamed membrane or a combination of any of these.

Thus we learn that allergic nasal and sinus disease can be definitely diagnosed, that it is a local manifestation of a general state, that it should be treated primarily as such, and that surgery should be resorted to only in the presence of obstructive or secondary suppuration, never for the removal of a focus as a cure of allergy.

However, it is well known that bronchial asthma of the intrinsic type is probably of infectious origin. Some product of the inflammatory process acts as the exciting allergen. Therefore the allergic types and infectious types belong in the same classification whether they be intrinsic or extrinsic, as they come under the same ruling of being caused by an allergen. So, to give relief, it is not only necessary to remove or to avoid contact with or ingestion of the allergen and to desensitize the patient against the offender, but it is also necessary to relieve the underlying contributing causes of allergic sensitiveness, whether it be due to the imbalance of the endocrine, biochemical or autonomic systems or of the acid-base equilibrium.

Well planned endocrine therapy to restore the hormonal balance, proper dietary adjustments to correct faulty biochemical reactions, and stabilization of the general metabolic processes often corect this condition when there is a general predominance of the parasympathetic control.

Many asthmatic patients do have sinus infections, and surgery, while it may and sometimes does relieve the asthma, will not give a permanent cure. The indications for sinus surgery in asthmatics are definite. That type of sinus disease that would demand surgery should always be operated upon regardless of the existence of the asthma. Then the more simple methods of treatment in the nose are often helpful, such as cocainizing the sphenopalatine ganglion, or frequent aspiration with suction, or cleansing by washing out the nose and sinuses, while, in the meantime improving the patients general condition.

As there are many cases of vasomotor or tumescent rhinitis, closely allied to allergy, in which the causative factor can not as yet be determined, a new treatment called iontophoresis or zinc ionization has been devised. All authors are agreed that this will not cure, although it may relieve, hay fever if applied after the onset of symptoms, that it is dangerous in certain types of the disease, especially in the presence of any suppuration

in the sinuses, that while the immediate results in pure types of vasomotor rhinitis are excellent in skilled hands, the duration of the results is not known. Phenol, trichloracetic acid, the chromic acid bead, or nitrohydrochloric acid therapy are reported as accomplishing the same results without the same danger.

The Chest and Sinus Infections

Those chest conditions that can be traced most directly to sinus infections are tracheobronchitis, bronchitis, peribronchitis, bronchiectasis, and some cases, as mentioned, of bronchial asthma. The probable routes by which infection reaches the chest from diseased sinuses are, 1—by direct aspiration of infectious material into the trachea and bronchial tree, the so-called "droplet infection"; 2—by lymphohematogenous extension; 3—hematogenous extension; and 4—direct continuity of tissue. While the laryngeal reflex is a good "watch dog" of the lungs, it has been proven that small or microscopic quantities of infectious matter can get by without disturbing this most valuable of all reflexes. It has been repeatedly demonstrated by the x-ray that iodized oil placed in the sinus cavities on one day will show small quantities in the bronchial tree the next day. Other workers have injected india ink and tubercle bacilli in the sinuses of cats and rabbits and later found the ink or the bacilli in the submaxillary and internal jugular lymph nodes, the larger lymph trunks, the great veins, the right side of the heart, the pulmonary arteries, and finally in the peribronchial lymph nodes. There are very few scientific data of direct bloodborne infection from the sinuses to the lungs, although cases are frequently seen that seem clinically to demonstrate the hematogenous route. Also there are but few scientific data to prove infection in the lung is due to direct extension or continuity of tissue from the sinuses. If the sinus is full of pus under tension, then the disease in the lung is more likely to be lymphohematogenous. If the pus is draining freely into the nose, then it is probably true that the manner of transfer to the lung is by direct droplet infection due to aspiration. Statistics from various clinics show that nasal sinus disease is present in from fifty-five to one hundred per cent of all bilateral bronchiectases. Some authors feel that the association of sinus disease in bilateral bronchiectasis is almost constant. Of course, there are other causes, especially in the unilateral type, such as lung abscess, foreign bodies, or fibroid phthisis, but the etiology of these conditions is more self-evident.

Careful histories in these bronchiectatic cases generally reveal that the trouble started early in life; that as a child the patient suffered frequent colds, indicating flare-ups of chronic sinus disease with a tendency to coughs. X-rays of the sinuses should be taken, in every case of bronchiectasis, by the most modern method. The pictures will show much worth-while information. So it follows that the best treatment of this condition is preventive —which means that sinus disease must be recognized early in life and unrelenting effort made to control it. Removal of nasal obstruction, conservative treatment or radical operation, aspiration, bronchosopy, injection of liodol or other steps may be indicated, according to the individual case, in order that the rhinologist may be of help to the pediatrician or physician in clearing up this distressing condition.

Limitations of Neurosurgery in this Field

The surgeon, in recent years, is attempting to relieve symptoms, particularly neurologic referred pains and essential hypertension in many types of disease, where the pathologic focus cannot be reached, or, where available to the knife, would cause mortality if removed, by interrupting afferent and efferent stimuli from or to an organ or area. It has been stated that the autonomic nerves are not essential to life and that the various neurons may be severed with impunity in the relief of suffering. Relief has been prompt in many painful manifestations where the ganglion centers are below the superior cervical ganglion. The superior cervical gives off branches to the esophageal, the phrenic, the superior laryngeal, and the hypoglossal, and originates the superior cardiac nerve. It is impossible to get all its branches without producing other unpleasant symptoms. It is likewise true of all the intercranial autonomic ganglia that unless the seat of the pathological process is in the ganglion itself, and this is removed or section is made at the origin of the sympathetic fibers at the base of the brain, it cannot be stated with cer-

tainty that relief can be obtained by means of nerve block or nerve section. We see reports of follow-ups from many sources of failure to relieve symptoms by surgery of various intercranial autonomic nerve pathways. Surgery on the autonomic nerves, so far as the rhinologist is concerned, is in a somewhat confused and experimental state, because of conflicting theories, lack of suitable material for experimentation, and the difficulty of interpreting results. The elaborate networks, the intricate pathways and the anastomoses between the sensory nerves of the head are so closely fused with the parasympathetic system that selective surgery is almost impossible. Referred pain from deep nasal sinusitis, through the various autonomic tie-ups, may be manifested anywhere in the face or head as well as down the neck, in the upper extremity or in the chest. The only way relief can be had in this situation is to tackle the pathological process directly in the nose.

Sinusitis and Meningitis

Sinus disease as a focus of infection is now so familiar to all that I will not consider it in this paper. However, I will mention that more data have been brought out recently proving that the sinuses are responsible for a much larger number of cases of meningitis than previously thought. Therefore cultures should be made of the sinuses and x-rays taken, in every case of meningitis, in addition to the acquisition of other pathologic data, in striving to discover the etiologic factor.

In summing up, let me say that I have strictly limited this paper to what seemed to me to be the most pertinent and interesting material presented in the literature during the past two years. I have reviewed the micro-anatomy of the mucosa, the arteriovenous system and the nerve network, especially the parasympathetic nerves, in order to give you the most modern views on the physiologic and pathologic conditions in the sinuses and their interpretation. From this point of view, nasal allergy and its associated states of asthma and allied chest conditions have been clarified. If I have helped in bringing your understanding of sinus conditions up to the recent conceptions herein expressed, then my efforts in writing this paper have not been in vain.

878 PARK PLACE.

THE PATIENT WITH SINUS DISEASE

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WHEN I first began my work in rhinology, I was imbued with the enthusiasm of a tyro. This completely optimistic spirit was soon dampened by some of the statements and caustic remarks of general practitioner and patient alike and often by the seasoned rhinologist. The general tenor of both physician and patient became disheartening. I, therefore, determined to fathom the basis for the pessimistic attitude against which the rhinologist must contend.

Patiently and persistently, over a period of eighteen years, I conducted my personal observations not only in the matter of sinus disease per se, but in the general relationship and attitudes of the "sinus patient," the family physician and the rhinologist. And in the ultimate interest of all parties concerned do I hope to add my little mite for a clearer and better understanding of the difficulties under which the rhinologist labors. With this realization and understanding those not practicing rhinology will, I hope, cooperate in greater harmony with the rhinologist—to the ultimate advantage of the patient.

General Considerations

There has been a good deal written on sinus disease *per se*. The literature shows a good deal of thought and painstaking effort on the part of the authors. But the problem of sinus disease which has not been gone into so completely is the relationship, understanding and cooperation between patient, practitioner and rhinologist.

In this paper an attempt will be made to view the subject of sinus disease from the general educational standpoint, or may I say, from the standpoint of health in-

struction, taking sinus suppuration as our topic. For, indeed, sinus disease is not only an individual disease but when viewed broadly and carefully this condition, from the infectious, from the contagious and from the economic standpoint, is virtually a public health problem. It is the opinion of the more seasoned rhinologists that the general practitioner and those not practicing rhinology have failed to interest themselves in the scientific and basic facts of sinus disease from student days onward. True, we have had failures and will have failures—so have others. But we must acquaint the physician with the difficulties with which we must contend. We must impress upon the physician the need for his cooperation; and we cannot fail but impress him (if he is impressible) by bringing before him almost didactically the anatomy, physiology and pathology of the nose as an organ, and indeed a very important organ of the human economy, and the place it holds in the maintainance of bodily health and the part it plays as a focus in the development of remote symptomatology and remote systemic diseases.

Our position during the first consultation with a patient is often unpleasant, for the patient has his own preconceived ideas, and we also realize that this same patient has been, perhaps, to a dozen rhinologists before coming to us.

Any chronic disease is difficult to treat and especially is this true of chronic suppurative sinusitis. We hope, in this writing, to place the position of the rhinologist, in the matter of sinus disease, clearly and squarely before those physicians who are not rhinologists.

The treatment of sinus disease, we all know, is a long-drawn-out and tedious procedure where patience and perseverence must be exercised; where a brotherly sympathy must be bestowed upon the patient suffering from sinusitis; for such a patient is indeed suffering and he is indeed entitled to relief. With all this we must take into consideration the chronicity of the disease and the time element that is necessary for a successful termination of the condition.

Peculiar Difficulties and Criticism

Only too often do physicians pointedly and very frankly tell us that they have seen very few, if any, good results of our treatments or operations; and sometimes they finally conclude their pointed remarks by stating that they prefer to keep their "nose patients" away from the "nose specialists."

The patient's remarks only too often reverberate the opinion of his physician and of those of his friends, as he takes his seat in the consulting room and prefaces his remarks somewhat as follows: "Doctor, before you examine my nose, will you please tell me why it is that so many nose operations are unsuccessful and so few people apparently are improved by nose treatment or nose operation?"

How can the rhinologist answer this question? What can his inspiration be? He begins with a handicap. How can he hold this patient? How can he treat this patient? How can he get a result?

Fortunately, a good many patients are more open-minded and enlightened. They come seeking relief to which they are indeed entitled. This comprises the larger group. The former, a doubting group of patients, although a minority, exercises a discouraging and disheartening effect upon themselves as well as upon the rhinologist. Those who do not cooperate properly fail to obtain some degree of relief of symptoms, or, perhaps, even a cure.

We all know only too well the difficulties that attend the treatment of sinusitis. Then, too, we must take into consideration the many predisposing factors and associated conditions of sinus disease. The treatment of sinus suppuration is an individual problem which must be solved as an individual problem in each individual case. True, there are many generalities and routine measures in all cases of sinus disease. With patience, persistence, perseverance and cooperation between the patient, family physician and rhinologist, we cannot fail to obtain some degree of improvement, perhaps even a functional cure.

Points of Interest

At this point, it will be in order to offer some informative statements with respect to sinus disease:

1. The majority of cases of sinus disease are chronic; the condition very often begins in infancy or early childhood.

2. The basis for sinus disease may be produced by a previously existing nasal obstruction plus general systemic conditions which predispose to infection; i.e., allergy; vasomotor rhinitis; chronic severe constipation; cardiovascular-renal condi-

tions; insufficient or poorly balanced diet (lack of vitamins, lack of mineral salts, lack of water drinking); occupational environment; chronically diseased tonsils and adenoids; climatic conditions; the acute infectious diseases including especially the upper respiratory infections and the exanthemata, scarlatina predominating; habits: lack of exercise, overindulgence in smoking, swimming and diving (although in improper swimming or diving, sinus suppuration may develop without a preexisting nasal obstruction). Contagion plays a great part in the development of sinus disease, a fact which is frequently overlooked. One or more members of the family may be suffering from a so-called "head catarrh" which is readily transmitted from one member of the family to another. One must not overlook the fact that sinus disease is contagious, in a sense. Heredity has not been credited as an etiological factor in sinus disease. However, years of experience which have carried with them the privilege of examining subsequent generations have shown a similarity, in many cases, in the abnormal intranasal conditions of parents and children.

3. The acute sinus condition is often an exacerbation of old sinus disease, or an acute infection may occur in the presence of an old chronic nasal obstruction as the predisposing factor, or an acute infection may be encountered with or without a preexisting nasal obstruction.

4. Sinus disease may be the result of faulty sinus development in infancy or childhood, this maldevelopment being embryonic or being due to dietary insufficiencies or trauma—or to unknown causes.

5. Most patients with sinus disease, if not completely cured, can at least be relieved of the majority of their symptoms and made comfortable (although the intranasal condition may not be anatomically cured).

6. The time to begin the treatment of sinus disease is at its inception. The longer the sinus condition, or at least the symptomatic nasal obstruction, remains untreated the more may be the involvement of the sinuses or the greater may become the amount of turgescence and hypertrophy on the side opposite the obstruction.

7. "The very nature, position and anatomy of the sinuses makes for comparative ease of infection, which (infection) becomes aggravated by the difficulty of natural drainage. Knowing this, the difficulty in medical or surgical approach can be better appreciated."

8. The sinuses, although not completely developed, are present in the majority of cases in infancy. This fact, although not presented in the older textbooks, has been definitely established in recent years; i.e., the sinuses, although not fully developed, do exist in the fetus as early as the fifth month.

9. We must continually bear in mind, in considering the problem of sinus disease, that nasal obstruction and infection by a pus-producing organism are the factors with which we must contend (the foregoing factors will be taken up as will also the remote symptoms and diseases of sinus origin).

The Obstructive Factor

In considering the history of the patient's nasal obstruction, the patient very often states that his breathing has been impaired for the past few days, weeks or months. Careful history-taking will, in most cases, reveal symptoms dating years back. On rhinoscopic examination, we may see a deflected septum in various shapes and degrees of obstruction. There may be hypertrophied and turgescent turbinates; we may see polypoid masses, or we may see a foreign body. Pus may or may not be present, or, if present, may not be visible.

The problem of nasal obstruction is not so simple to attack as one is led to believe. The actual obstruction may have begun perhaps very early in life and caused little or no symptoms until the time when the patient presents himself, in adult life, with symptoms of nasal obstruction to a degree which causes him to seek relief.

The patient is indeed surprised when he is told that the nasal obstruction is of long standing. He states that he has been comfortable and has had no difficulty in breathing. Further history-taking may reveal that the patient had really been comfortable although the intranasal obstruction was present but not sufficient to obstruct the breathing to a degree of noticeable discomfort. Or the patient, on further questioning, may give a history somewhat as follows: Moderate nasal obstruction present only at times; a type of obstruction alternating from side to side. When lying on the right side the right side "stuffs up" and when lying on the left side the left side "stuffs up." This alter-

nating nasal obstruction may also occur during the waking hours, especially in sudden changes of weather; in damp weather; in going from the cold outdoors into a warm room; and also during or soon after a meal.

Here we must stop to consider the part played by the nasal septum in the causation of chronic progressive nasal obstruction. It must also be understood that the intranasal structures, although not anatomically perfect in size, shape or contours, may be functionally normal; and that the nose, although not anatomically normal, may also perform its functions normally until such time as nasal trauma occurs (falling on the nose, punch in the nose, injury by baseball, etc.). This trauma increases the previously existing intranasal obstruction sufficiently to interfere to a greater extent with the proper ventilation of the sinuses, with the resulting predisposition to infection.

Anatomy and Physiology

The next logical step is to review briefly the anatomy and physiology of the nose, and with this review the pathological states will be more easily appreciated. Theoretically, the nasal chambers are divided by the nasal septum into two anatomically symmetrical halves. The septum is a straight up-and-down structure extending from the tip of the nose to the posterior border of the hard palate, upward to the cribriform plate of the ethmoid, and backward to the rostrum of the sphenoid, the average adult septum being about three inches long and about one and three-quarters inches in height. If we consider the nose as a triangle, with the septum a perpendicular dropped from the apex to the base, we can compare schematically the hypothenuse of the triangle to the lateral wall of the nose, from which there are three finger-like projections called the turbinates. These are termed the inferior, middle and superior turbinates. The space which is underneath the overhang is termed the meatus and each meatus is named from its overlying turbinate (the inferior meatus being underneath the inferior turbinate, the middle meatus occupying the space beneath the middle turbinate, and the superior meatus being found in the space beneath the superior turbinate). The inferior turbinate has its own osteogenetic center. The middle and superior turbinates are processes of the ethmoid bone.

The drainage of the sinuses and of the tear duct is practically constant, the drainage being as follows:

Into the inferior meatus the tear duct drains. Into the middle meatus the frontal sinus, the anterior group of ethmoids and the antrum drain. Into the superior meatus, the middle and posterior group of ethmoidal cells and the sphenoid sinus drain. There is some degree of variation in the sites of drainage in the ethmoidal group of cells, but the general scheme of drainage is as above noted.

The turbinal bones are so called from their scroll-like shape. The thickness of this bony tissue is normally about the thickness of the ordinary sheet of brown wrapping paper. The inferior turbinate is the longest and the largest of the three turbinates, the superior turbinate being the smallest, and in most cases not visible on rhinoscopic examination. In the respiratory portion of the nasal cavity, the mucosa covering the turbinate bodies is of the columnar ciliated type. Interspersed among the columnar ciliated cells are goblet or mucin cells, while between the epithelium and its basement membrane is a fibrous layer infiltrated with leucocytes so as to form in many parts diffuse lymphoid tissue, which is particularly found in children. Beneath this is a nearly continuous layer of smaller and larger glands, some mucous and some serous, the ducts of which open upon the surface. In the respiratory portion of the mucous membrane there is an extensive anastomosing plexus of veins which in some regions forms a distinct cavernous tissue. The cavernous tissue is particularly distinct over the inferior turbinated bones (Gray).

It is the contraction and relaxation of the turbinal mucosa that produces the alterating type of nasal obstruction; i.e., first, one side clogging and the other side becoming patent, and then a reverse process. This type of mucosa, with an underlying structure containing a cavernous circulation, is comparable to erectile tissue, the turgescence and contraction being a vasomotor reaction stimulated by one or more of the causes previously mentioned. Further anatomical discussion for the present purpose may become superfluous and confusing.

It may now be well to mention briefly the physiologic functions of the nose:

1. Breathing
2. Warming and moistening and filtering the inspired air
3. Evaporating the tears
4. Organ for the sense of smell; organ to assist in the sense of taste
5. The physiologic functions of the nasal accessory sinuses briefly described are: To furnish lightness and buoyancy to the skull and resonance to the voice; also to act as accessory organs of respiration by assisting in warming and moistening the air. It is a definitely proven fact that the sinuses have a tidal circulation of air. We should, therefore, consider the sinuses, when healthy, accessory organs of respiration (it has been estimated that the nasal and pulmonary respiration eliminates one quart of water in twenty-four hours)

Keeping in mind the idea of the fundamental anatomy and physiology of the nose, let us proceed now to a consideration of nasal obstruction.

Further Consideration of Obstruction

It has been my experience from the clinical standpoint that the nasal septum is usually the original offender in the causation of progressive nasal obstruction. Let us begin with the fact that there is a nasal obstruction on one side of the nose, this obstruction being a deflected septum which causes an occlusion of the air space on the right side. For the purpose of discussion we will say that two-thirds of the air space is obstructed. From the brief description of the anatomy of the nose, one can understand why the obstruction is greater if the deflection or thickening is anterior. The obstruction then is a deflected septum or a thickened septum with or without a ridge or knuckle formation. So we have an obstruction on the right side, for example, with a reduction of, let us say, two-thirds of the air space. The opposite side (left side) must then take up, in addition to its own duty, the impaired function of its fellow on the right side; and, if we follow the laws of nature here, as we do in other parts of the body, we say that the left side is compensating for the right, and as a result of the additional burden we then see, after some time, a compensatory hypertrophy on the left side. This hypertrophy is primarily an effort on the part of nature to increase the size of the intranasal structures (turbinates) in order to increase the square area of mucosa to carry on as normally as possible the physiologic functions of the nose.

With the varying degrees of obstruction on the one side and the hypertrophies on the opposite side, the patient remains more or less comfortable for a number of years, and in some instances throughout life. But the predisposition to sinus infection is laid down by the defective aeration of the sinuses that is produced both on the side of the original septum deflection and on the opposite side where the compensatory hypertrophy has developed. It is such a patient, who has had this deflection and hypertrophy for a number of years, who presents himself for relief of nasal obstruction. But if, in addition to the nasal obstruction, this patient also has a chronic sinus infection, he is amazed when he is informed that one or more operations may be necessary to correct the original obstruction and the subsequent hypertrophies; and for the eradication of the sinus disease. But we see, from time to time, a recession of the hypertrophies after the septum operation. The recession, of course, is never to the normal state, but if it is sufficient to carry on a normal nasal respiration and the other physiologic function of the nose, then we are indeed content and no further operation is necessary. And, indeed, so may many cases of sinus disease clear up after the submucous resection of the septum.

Nonoperative and Operative Measures

At this point it may be well to state that every case of sinus disease does not require an operative procedure. Each case, of course, must be treated as the picture presents itself. Intelligent and conservative treatment has cleared up many acute as well as many chronic sinus conditions. Conservative treatment, in order to be successful, must include both local and general measures, taking into consideration the all-important fact that the nose is a part of the human body and that it functions twenty-four hours a day. We must consider the physical condition of the patient, age, occupation, residence, habits, water drinking, smoking, exercise, contagion, diet and nutrition (bearing in mind the necessity for a well-balanced diet and the value of certified vitamin D milk). Vaccines, autogenous or stock, may be employed. Personal experience with autog-

enous vaccines has proven more satisfactory. The local treatment in the office may be carried on too far or too long. Too frequent or too strenuous treatments may be harmful rather than beneficial. Intranasal tampons serve a useful purpose if properly employed. One must bear in mind, however, the possibility of argyria when silver preparations are employed. Nasal suction must be employed with care and precision; it must be gentle and not traumatic. Tamponage and suction are frequently abused. Nasal cleansing should be the keynote and the methods employed should all tend to the ultimate goal—the ventilation of the sinuses. For, as Halle states, "The one factor which is most desirable for the drainage of the sinuses is primarily their ventilation." The sinus ventilation must be maintained as continuously as possible. This is best accomplished by instructed and supervised treatment by the patient at home. There are many aids that can be employed by the patient who can maintain an almost continual ventilation of the sinuses by the regular application (preferably by spray) of the desired type of astringent. The foregoing remarks explain why one can hardily expect to clear up a sinus infection by office treatment alone. Yet, the necessity and value of the patient's home treatment is very often disregarded, both patient and doctor frequently depending upon office treatment alone to clear up a sinus infection. The patient must not be dismissed with a prescription but must receive definite instructions. The medication prescribed should first be used in the office and the prescribed treatment to be carried on at home by the patient should be demonstrated by the physician or his office assistant before the patient leaves. The success of the treatment, be it conservative or otherwise, depends therefore upon office treatment, home treatment, advice and general care. When,in the rhinologist's judgment, conservative treatment is of no avail, surgical procedure should be instituted. Careful planning and thorough intranasal investigation should be carried out before laying the plans for surgical intervention. One must carefully shrink and investigate the intranasal structures and where indicated, in addition to anterior rhinoscopy, one must utilize transillumination and x-ray, examination by the nasopharyngoscope, posterior rhinoscopy, sinus aspiration with culture, cytological study, sinus irrigation and x-ray after lipiodol injection. Repeated antrum irrigations will in many instances clear up an antrum suppuration. In some cases of nasal turgescence the antrum irrigation alone has been known to produce improvement of the symptoms.

In some cases varying types of treatment may have to be carried out for weeks or months before a submucous resection is attempted. This is especially true in cases where the mucosa is thickened, dull red, and dry, and where there is a profuse discharge from the sinuses. We appreciate that such long-drawn-out procedures are discouraging and disheartening to the patient as well as to the physician who has referred the patient to the rhinologist. But, if we are to obtain good results in the treatment of damaged tissues that have been unhealthy for years, we must try to eliminate the sinus suppuration as much as possible before a submucous resection. This pre-operative care is conducive to a more rapid and uneventful convalescence, reduces the possibilities of septal hematoma and abscess, and promotes an earlier recession of the associated turbinal hypertrophies and a clearing up of the sinus infection. Even though the treatment decided upon is surgical, the rhinologist practices conservatism, for, practically, a normal physiologic function may be restored with a minimum amount of surgery. And then, too, he realizes that nature does not grant him the privileges of the general surgeon, for the rhinologist bears in mind at all times the proximity of the nasal structures to the eyes and cranial cavity and he prefers, therefore, to do only the immediate, necessary surgical procedures; and if further surgery is necessary he performs the procedure at a later sitting.

In order to avoid confusion, I have not included as many of the details as might enter into a discussion of this type, the purpose primarily being to furnish a brief practical review of progressive nasal obstruction and sinus disease—a review which, with some indulgence, will be understood by physicians not practicing rhinology.

Summary

The following summary is offered from the practical standpoint:

1. The development of sinus disease depends upon faulty ventilation and aera-

tion as a result of obstruction, whether it be acute, traumatic or the progressive type, the acute sinus infections being due to the acute exanthemata, especially scarlatina, severe upper respiratory infections, foreign bodies, improper swimming and diving; the traumatic being due to intranasal fractures; the progressive type being due primarily to a deflected septum producing various degrees of unilateral obstruction, the infection becoming bilateral after the development of compensatory hypertrophies on the side opposite the original side of obstruction.

2. This type of progressive nasal obstruction may develop so slowly that it is well advanced when the patient presents himself for relief.

3. We must remember, then, that there has been a chronic nasal obstruction and, in addition, in many cases, thickened sinus mucosa; or sinus suppuration with or without polyp formation. And if we bear in mind the nature and the anatomic position of the sinuses, we can then realize not only the difficulty of approach but the dangers of too extensive or too radical procedure; bearing in mind also the dangers involved not only in the radical operation but in the time element consumed.

4. One must remember, too, that there are a good many associated etiologic factors in the production of sinus disease (the general headings of which were given above). The nose with its accessory sinuses is a highly specialized organ and must be considered not only as an organ of special sense but as an organ of the body subject to the abuses which may arise within or outside of the body.

5. Gaining the confidence of the patient is paramount. This relationship is best fostered as the rhinologist takes the history himself, bringing out by careful and painstaking questioning the earliest appearance of nasal symptoms.

6. The other aforementioned etiologic factors must be thoroughly investigated.

7. We must sympathize with and appreciate the surprise of the patient when he is told that the condition is one of long standing.

8. The following will give the reader an idea of the symptomatology and remote systemic conditions that may develop in cases, from the stage of uncomplicated nasal obstruction to the final stage of chronic suppurative sinusitis:

Symptoms

Nasal obstruction
Frequent colds
Sneezing
Nasal discharge
Postnasal dripping
Sniffling.
Twitchings of the nose to the point of grimacing
Rubbing the nose
Picking the nose
Epistaxis
Mouth breathing
Snoring
Restlessness
Restless sleep
Head sweats
Bad taste in mouth
Low grade temperature rise
Hoarseness—other laryngeal conditions —pachydermia—polyps
Hawking
Spitting
Clearing of throat
Cough (irritative or productive)
Puffiness about eyes
Redness of sclera
Glandular enlargement
Aprosexia—poor school work—poor memory—lack of concentration—listlessness—dullness—patient tires easily
Sensitivity to cold—chilliness
Allergic states
Headache (although very young children will not complain of headache)
Symptoms referable to pulmonary tract; to the genito-urinary system; to the digestive system (an important symptom being lack of appetite, especially for breakfast)

9. When the symptoms, complications, and either remote or associated conditions of sinus disease are discussed one grows more sympathetic with the patient who has a sinus infection. One will then realize that such an individual, although an ambulatory patient, is going on through life in varying degrees of discomfort. Such a patient indeed deserves the efforts and the comforts that his physician is able to give.

Conclusion

With these thoughts in our own mind, we hope to establish more clearly, in the mind of the practitioner, the status of the sinus patient and the difficulties under

—Continued on page 568

Clinical Notes

FRACTURES OF THE SHAFTS OF THE RADIUS AND ULNA

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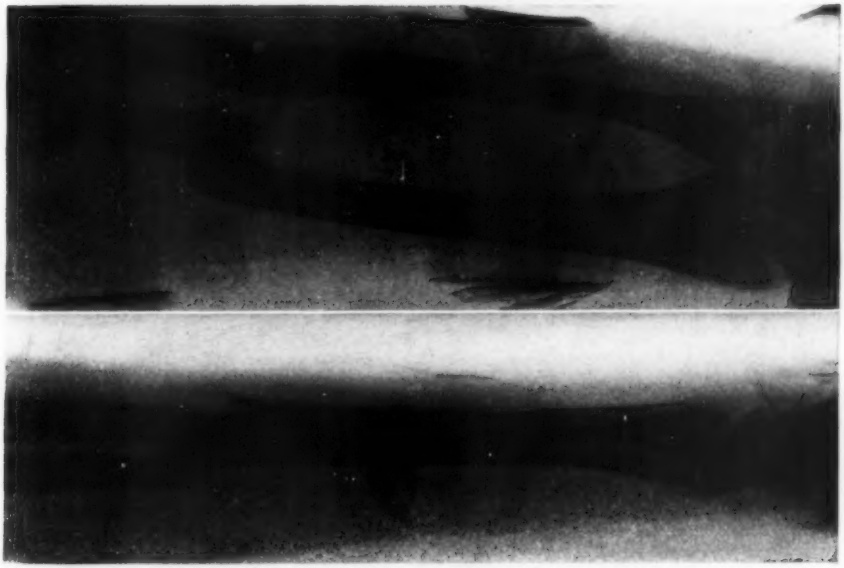


Fig. 1a

Overriding fracture, middle 1/3 radius and ulna.

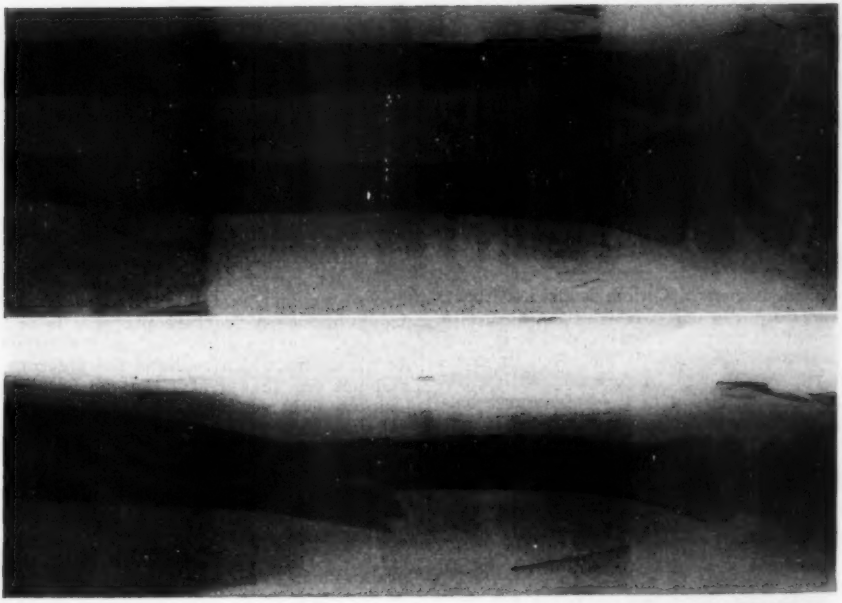
FRACTURES of the shafts of the radius and ulna are often in the field of neglected surgery. Everyone seems to feel competent to treat these fractures and insufficient attention is paid to them. To many any sort of reduction seems to be satisfactory. When reduction is very poor open operation is too often unnecessarily resorted to. I feel that with a little more attention to these fractures better approximation can be obtained. In our present series of 142 consecutive cases, many were of the difficult overriding type. However, reduction was good by the method to be described and open reduction was never necessary.

From the Out-Patient Surgical Service of the Norwegian Hospital.

The popular impression that anesthesia, fluoroscopy and casual manipulation suffice to reduce a fracture properly is erroneous. Manipulation consists of a definite procedure which realigns the fracture and not one that grates the ends of the bones together in a hit or miss fashion with the hope that realignment will take place. By my procedure the forearm is never manipulated as a unit. Each bone is considered individually and the ulna reduced first where both bones are displaced. The entire procedure takes about one minute after the traction and countertraction are applied.

Fig. 1b
After reduction.

Fig. 2a
Fracture middle 1/3 of radius and ulna, with overriding of the radius.



Method

The fracture is palpated to identify the position of the fragments.

X-rays are taken in the anteroposterior and lateral views to confirm one's palpation.

A mental picture of the position of the fragments and the requisite muscular pull is then formed.

Reduction is planned to overcome the muscular pull and allow the fragments to return to their normal position.

After applying traction to the hand and countertraction at the elbow, the surgeon outlines the position of the fractured edges. With a thumb on the fractured ends of each bone, and the fingers resting on the opposite side of the bone, he produces pressure angulating the bone. This angulation must be increased until the fractured edges slip by one another. This is where tactile sensibility is most essential. If one cannot correctly palpate the bones one will not know when they slip by one another and to what degree. Having angulated the bone until the fractured surfaces under one's thumbs approximate one another, the pressure is released, allowing the fracture to come back into normal position. In reducing the radius the

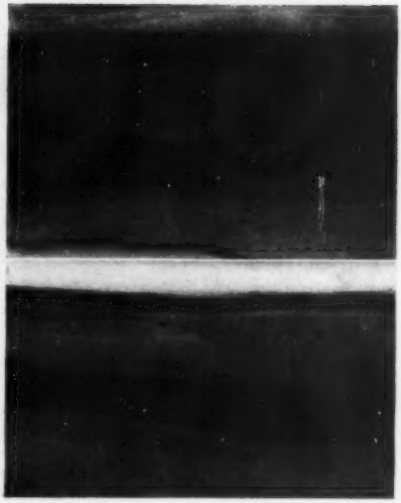


Fig. 2b

After reduction.

Fig. 3a

Fracture middle 1/3 of the ulna and upper 1/3 of the radius with posterior displacement of the upper fragment.

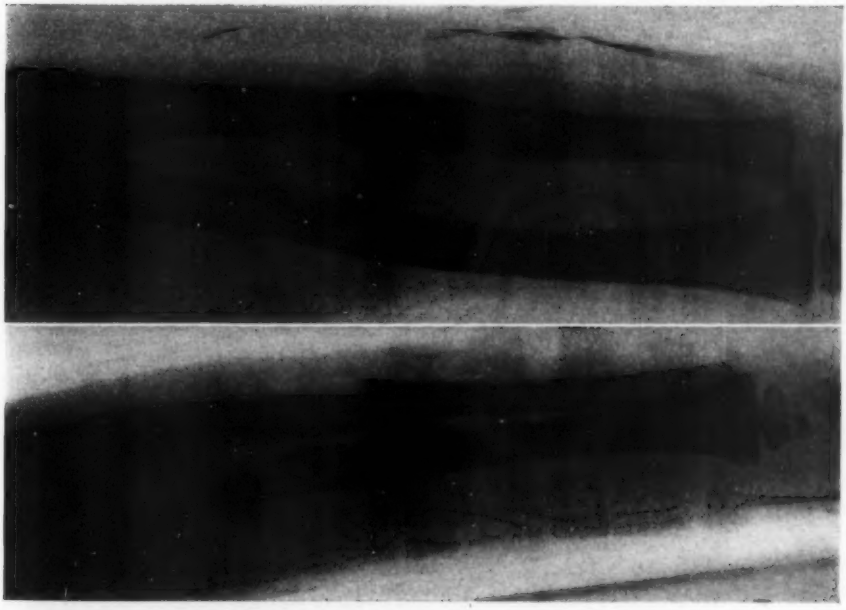


Fig. 3b
After reduction.

Fig. 4a
Overriding fracture of the lower end of the radius and ulna.

surgeon stands on the ulnar side of the forearm and vice versa for the ulna.

Following reduction an anterior molded splint is applied if one bone is fractured. If both bones are fractured an anteroposterior molded splint is applied from the elbow to the metacarpophalangeal joint, allowing free motion of the fingers at all times. No immobilization of the elbow is necessary other than a sling. Passive motion is started at the end of one week, unless the fracture is in the upper third, when two weeks are allowed.

Conclusion

An efficient and easy method of reducing fractures of the forearm is presented the essential part of which is tactile sensibility and manipulation of only one bone at a time. At no time has the manipulation of one fractured bone displaced the other.

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Illustration 1

This drawing is a copy of x-ray figure 1 showing the ulna already reduced.

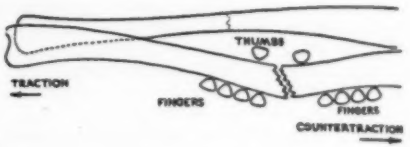

Illustration 2

This illustrates reduction of the radius with the surgeon standing on the ulnar side of the forearm producing pressure with his thumbs while controlling the pressure with his fingers under the bone.

Illustration 3

After releasing the pressure the bones assume their normal position.

Fig. 4b

After reduction.

Papilloma and Carcinoma of Bladder in Dye Workers

G. H. GEHRMANN, Wilmington, Del. (*Journal A. M. A.*, Oct. 31, 1936), points out that the first aniline tumors of the bladder to be reported in this country were detected in 1931. Prior to 1914 European countries, principally Germany, manufactured about 80 per cent of the entire output of dyes. It was subsequent to 1914 that the dye industry was developed on a large scale in this country. A period of sixteen years elapsed before the first aniline tumors developed to the point of recognition in America. This period closely corresponds to the average time of exposure necessary to produce these tumors.

ERYTHEMA NODOSUM: COMPLICATING ACUTE APPENDICITIS

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IN THE past numerous case reports and studies have been made on erythema nodosum, its nature, etiologic relationships to other diseases and significance. It is the consensus of opinion today that there are several types of erythema nodosum. [1, 2, 3, 4, 5]

One group of cases is intimately associated with tuberculosis. [6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17] It is assumed that it may be an allergic response to a tuberculous infection or possibly a form of cutaneous tuberculosis.

The basis for this assumption has been the high frequency of positive Mantoux tests in erythema nodosum, the high incidence of enlarged paratracheal, mediastinal lymphnodes as visualized by x-ray, the frequent development of active tuberculosis in carefully followed cases suffering from E. N., the discovery of exposure to open cases of tuberculosis, and the reactivation of the lesions after tuberculin injection.

On the other hand, there have been a number of case reports where tuberculosis could be definitely excluded as a factor, even remotely. [18, 19, 20, 21, 22, 23, 24, 25] These instances have been largely in conjunction with streptococcal infections of various types. Cases have been reported complicating streptococcus sore throat, erysipelas, scarlet fever, ulcerative colitis, and a considerable number of unrelated conditions such as malaria, syphilis, and measles.

A number of authors have considered E. N. as an independent infectious disease, [26, 27, 28] the etiology of which is uncertain. Rosenow [26] has isolated a pleomorphic organism from areas of focal infection in patients with E. N. and has reproduced the lesion in animals. Moon and Strauss [16] have isolated an organism from the lesion which they have called the *Corynebacterium cutis-nodosae*, and have been successful in reproducing the lesion of E. N. in 11 out of 12 rabbits and in 2 guinea pigs by inoculation.

From a critical review of the literature it appears that the exact etiologic factors are as yet not definitely known. Nevertheless it is safe to accept the conception of different types of E. N. on the apparent disease relationship. It is our purpose to present a typical case of E. N. complicating a case of acute appendicitis in a male of 45. No other such case has been found reported.

(Fig. 1)
Photograph showing typical lesion of Erythema Nodosum on anterior aspect of legs.

The bacteriology of acute appendicitis is still an unsettled issue. The extensive bacteriologic studies of Aschoff [29] and his co-workers on the subject have shown that an enterococcus or streptococcus was frequently found as the initial invader, with *B. coli* as a secondary invader. Unfortunately bacteriologic studies were not conducted in our case.

The patient was a white male of 45 years (a salesman), who, when first admitted to the Madison Park Hospital on March 4, 1936, gave a history of 2 days of generalized abdominal pain which subsequently localized in the right lower abdo-

men, associated with some nausea and vomiting. There was a previous history of vague abdominal pains coming on after meals suggestive of peptic ulcer, but not typical, and no other significant facts in the patient's personal or family history. Physical examination revealed a well nourished, somewhat obese, white, ruddy, plethoric individual. Eyes, pupils, nose, throat, neck, thyroid, lungs, heart and chest revealed no abnormality. The abdomen was obese. There was localized spasm, tenderness and rebound tenderness in the right lower abdomen. Extremities and reflexes were normal. Rectal examination revealed no abnormalities. Temperature 101, pulse 100, respiration 16. Laboratory data: white cell count: 11,000; polys.: 82 per cent with a predominance of young forms; Hgb.: 80%. Urine examination was negative. Blood pressure 150/90. A diagnosis of acute appendicitis was made and immediate operation was performed. An acutely inflamed, swollen appendix was removed and the abdomen closed in layers without drainage. The immediate postoperative course was uneventful.

A mild febrile reaction occurred, which gradually subsided to normal by the 4th day, and the patient was reasonably comfortable. Sutures were removed on the 8th day and a small amount of seropurulent material was evacuated from the lower angle of the wound. A small drain was inserted. Culture of the discharge revealed *Staphylococcus aureus*. The wound was then drained for four days and closed completely. On the 9th postoperative day, the patient felt nauseated and the temperature was elevated to 100.5. On the 10th day, the temperature was 101 and nausea persisted. Complete physical examination revealed no cause for the elevation in temperature. X-ray of chest showed normal lung fields with no areas of infiltration or densities suggestive of pulmonary tuberculosis. On the 11th day, a moderate number of dusky red areas appeared on the anterior surface of both legs. Some of these were somewhat raised above the normal skin surface and were slightly tender to the touch. During the ensuing week, the temperature mounted to 102, remaining in plateau fashion. The lesions originally noticed on both legs recurred in numerous new crops, both on the lower extremities and on the anterior and posterior surfaces of both upper extremities, the hands being spared. The ankles were edematous (Fig. 1 and 2).

At the end of the 2nd week following the appearance of the cutaneous lesions, they began to fade, the areas of skin infiltration to absorb, the temperature to drop, and the patient to improve generally. On the 28th postoperative day, the patient was discharged completely recovered. At no time was there any sign of cough or any pulmonary imvolvement. Repeated physical examination of the chest proved to be negative.

Blood culture during the time of the skin eruption was negative. The white cell count was 15,000, polys.: 84 per cent, with a predominance of immature forms. Urine, repeatedly examined, was negative. A biopsy taken from a fresh lesion on the forearm revealed an exudate about the deeper capillary vessels as well as in the subcutaneous fat. The picture (Fig. 3 and 4) was characteristic of neither periarteritis nodosa nor rheumatic fever, if one accepts Aschoff bodies as the criteria for diagnosis.

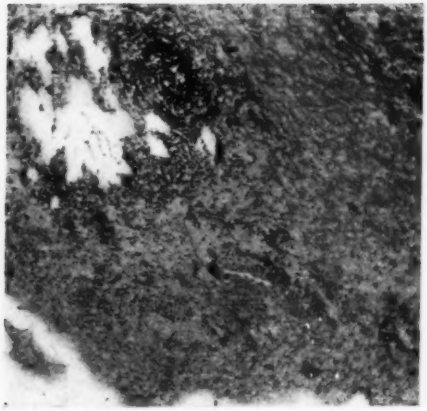
(Fig. 2)

Photograph showing typical lesions of Erythema Nodosum on forearm and arm. Lesions not so marked as in Fig. 1.

Comment

As the tuberculin reaction would have been of no significance if positive, since the individual was 45 and had lived all his life in New York City, it was omitted. However, there was certainly no clinical evidence of tuberculous infection at any time and the possibility of a new or early onset of tuberculosis in the form of a primary infection or secondary tuberculosis, so-called, was extremely improbable. It is possible that the patient developed an intercurrent appendicitis during the incubation time following an infection with the virus or organism producing E. N[16].

More probable, however, is the assumption that the organism which caused the acute appendicitis and the secondary wound infection was in some way respon-



(Fig. 3)

Low power view of lesion in corium of skin showing focus of purulent infiltration and early necrosis with some invasion of subcutaneous fat tissue. A slight perivascular cell collection is seen around vessel in low center of field; x 90.

sible for the onset of the E. N. The histology is suggestive of an allergic reaction.

It is likely that the same relationship existed between the intra-abdominal infection or abdominal wound infection and the E. N. as exists in the case of E. N. occurring after sore throats or other infections such as erysipelas or possible scarlet fever.

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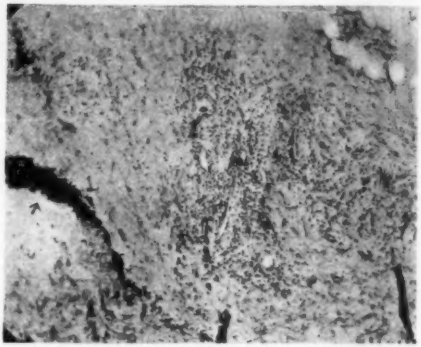

(Fig. 4)

Invasion of corium of skin by neutrophils and round cells, clustered mainly around new-formed granulation capillaries. Some fibroblastic proliferation is present tending to invade the adjacent fat tissue. At the left may be seen a focal hemorrhage; x 90.

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We acknowledge with thanks Dr. Curphey's studies of the pathologic histology in this case.

1616 Beverly Road.

Economics

Department Edited by Thomas A. McGoldrick, M.D., LL.D.

THE DOCTOR'S OBLIGATION

FLOYD S. WINSLOW, M.D.,
PRESIDENT OF THE MEDICAL SOCIETY
OF THE STATE OF NEW YORK

IT is the supreme obligation of the medical profession to provide the public with medical care of the highest possible quality, and to protect them from the results of inferior service.

Sometimes we get so close to the subject matter of our work that we fail to see it in the true perspective. It is my purpose here to discuss *the most important activities* of the Medical Society of the State of New York, and show just how each of them fits into this definition. Each one, as we shall see, either promotes the health and well-being of the people by making our membership better qualified to serve their patients, or operates to the same end by opposing and resisting those forces which either would interfere with our competency, or substitute incompetency.

First in order, if not in importance, are the courses in graduate education, which are given as county medical society programs under the sponsorship of the society's committee on public health and medical education. This committee has assumed important responsibilities in the field of public health, and, with suitable sub-committees, is concerned with such matters as pneumonia control, cancer, syphilis, maternal welfare, child hygiene, and nursing education.

The point is made merely when it is stated; these activities incease our capacities. But not only do they do this. Through the co-operation which results from contacts with official and voluntary health agencies, these activities also *increase the popular acceptance of our capacities.*

It is not my intent here to labor the point, or to bore you with details of the work of the various committees. But in passing I should mention the committee on scientific work, in whose charge is the important task of arranging the scientific programs at the meeting of the state society; the public relations committee, whose chairman directs the activities of his group in such matters as the examination of school children and the problem of the care of the deaf and hard of hearing children of the state. It is clear how these matters fulfill our supreme obligation to provide the public with medical care of the highest possible quality. Two other standing committees remain to be examined. These are the legislative and economics committees. The former is active at all times to "spot" provisions in bills proposed to the legislature which may be damaging to the public because of the effect they have upon medical care. Often these provisions are thoughtlessly inserted by their proponents who are ignorant of the effect of some minor provision in a law. Inasmuch as there are 6,000 bills introduced in every session of the legislature, it is easy to see the need, in protecting the public against inferior medical care, for active effectual work on the part of this committee. The economics committee easily fits into the latter section of our original definition, "to protect the public from the results of inferior service." We all know how ably this committee has presented the facts concerning compulsory health insurance, how in every foreign country where it has been tried, medical care has suffered deterioration. We need to be told these things over and over again. The advocates of socialized medicine lure the profession with the siren song of bureaucratic jobs, assured income —security—false security. We do not want to be secure. We want to remain insecure. We want to continue to be required to give our very best to every patient, or lose out in the gentlemanly competition which exists within our ranks. This is an incentive that operates to our insecurity, but to the security of the patient. We prefer the discipline of private

practice, which keeps us on our toes, to an assured income under bureaucratic control where our highest ambition is more likely to be to keep ourselves solid with the politicians who have taken over the job of running our profession.

I repeat, security for the doctor means insecurity for the patient.

The state-wide attack on pneumonia which was instituted by the Medical Society of the State of New York last year will be continued this season. In co-operation with the State Health Department, and various other agencies such as the Commonwealth Fund, Rockefeller Institute for Medical Research, and the Metropolitan Life Insurance Company, plans have been crystallized for rendering serum available throughout the State; for the education of the medical profession and for the popular instruction of the public. It is hoped ultimately to reduce the mortality from this disease in New York State by three thousand lives per year. In connection with this campaign, the committee on trends of the society has cooperated with all these agencies in the preparation of popular educational material, consisting of facts about pneumonia for editorial writers, radio talks, feature articles, and specific plans addressed to informing the public of these three facts:

First: Medical handling of these cases is just as much an emergency as acute appendicitis;

Second: Early recognition is of vital importance;

Third: Proper nursing care is equally important.

This popular publicity has been prepared by the Public Relations Bureau of the Society, and will soon be ready for distribution throughout the State.

During the winter it is likely that each county medical society will be requested to designate a member to speak on the radio or at public meetings on this subject. May I urge you to accept this responsibility as a way still further to place the organized medical profession in the position of leadership in public health activities, many of which in the past have seemed to appear so importantly in the public eye on behalf of non-medical groups as to imply that the medical profession is indifferent to these aspects of its high responsibility.

This brief recapitulation of the activities of the society, barren as it is of details, could be expanded extensively by inclusion of the mass of data which is required to be digested to pursue these policies; of the hundreds of stated meetings and personal interviews which are part of the big job which organized medicine has assumed in this State.

And it cannot be too emphatically put that it is incumbent upon us, by the pursuit of such measures as these, to prevent those whose occupation is to *talk* about medical care from inaugurating visionary proposals tending to prevent us whose occupation is to *provide* medical care from keeping faith with our patients and with the public. We have been accused of thinking only of our bank accounts when we oppose compulsory health insurance. When did we ever think in terms only of our bank accounts? Where is there another profession which is so impersonal in its primary objects, working so surely, and so effectually, fighting every kind of disease, driving out of existence, if it were possible to do so, the very source of our income?

William MacDougall once said that civilization began when man discovered that he could satisfy his egoistic and his altruistic impulses in a single act. Through the centuries the medical profession has been disciplining itself as a hard master would discipline a student of whom he had the highest hopes; through the centuries we have been perfecting ourselves to fulfill the great obligation to society which is our privilege. Today, the American public is the recipient of the best medical care in the world, and I need not bother you with the statistical evidence that with few exceptions, our death rates are below all those countries where the doctor's activities have been painfully made the object of the state's beneficence.

We want to remain free to advance ourselves in the way we do now, by service rendered to the patient, or by service rendered to the public as a whole. If MacDougall is right—and there are people who think that a man may have been a professor in a college and still sometimes be right—collectivism as an incentive to replace individualism would be a step backward. Our obligation would then be shifted from our shoulders and become the obligation of society as a whole. This is too great a diffusion of responsibility. Those who know the least, but who talk the most, would control.

Cancer

CHARLES WILLIAM HENNINGTON, B.S. (Rochester), M.D. (Hopkins), F.A.C.S., *German Literature Editor*, and UMBERT CIMILDORO, A.B. (Cornell), M.D. (Rome), *Italian Literature Editor*.

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EXECUTIVE SECRETARY, NEW YORK STATE COMMITTEE OF THE AMERICAN SOCIETY FOR THE CONTROL OF CANCER

THE ENDOCRINE RELATIONS OF CANCER

IV — THE PITUITARY BODY

THE phenomena of growth have been recognized to be controlled by the activity of the pituitary body. This organ, developed from a downgrowth from the floor of the interbrain and an upgrowth from the primitive pharynx, and situated in the sella turcica, is grossly divided into an anterior lobe, a middle lobe, and a posterior lobe.

There are at least five separate internal secretions or hormones derived from the anterior lobe of the pituitary body: (1) The somatotropic or growth hormone, called also phyone, antuitrin G and somatotropin; (2) the gonadotropic or gonad-stimulating hormone, called also glandular hebin, sex hormone of the anterior lobe and gonadotropin; (3) the thyrotropic or thyroid-stimulating hormone, called also thyrotropin; (4) the mammotropic or mammary-stimulating hormone, called also lactogenic hormone, galactin, prolactin and mammotropin; (5) the interrenotropic or adrenal-stimulating hormone, also called the adrenotropic, adrenalotropic, adrenocorticotropic hormone and interrenotropin (Evans, 8).

A hormone, intermedin, or the chromotropic hormone, is believed to be produced by the middle lobe of the pituitary body, and this hormone is thought to control pigmentation (Ewing, 9).

Pituitrin is an extract made from the posterior lobe of the pituitary body.

It would seem logical for the students of oncology to hope to find some relation between this organ, which presides over normal growth, and the abnormal growth processes expressed in tumor formation. In this connection it is well to call attention to the following statement of Evans (8): "The growth hormone is not more abundant in the anterior lobes of young calves than in those of adult cattle, and it is certain that the hormone is employed in the physiological mechanism of the body throughout life."

Pituitary tumors have been known for many years. Some of them are classified as adenomata, others as carcinomata. It seems to us that the borderline is narrow and that it is highly probable that a pituitary adenoma may become a pituitary carcinoma. The extreme clinical manifestation of the existence of pituitary tumors is found in the syndrome known as acromegaly, and recently Cushing (6) has described a syndrome characterized by rapidly developing obesity which, however, does not involve the extremities, kyphosis, sexual dystrophy, glycosuria, hypertrichosis, and arterial hypertension. This syndrome is found to be related to a pituitary adenoma composed of basophile cells.

The symptoms of tumor of the pituitary body are those due to pressure of the growth on adjacent structures, such as the optic commissure and the bones entering into the formation of the sella turcica, and those due to dysfunction of the pituitary body itself, such as irregular menstrual phenomena, amenorrhea, loss of libido, depression, sterility, spaced teeth, abnormal distribution of body hair, nutritional changes in the skin, dwarfism, and other changes in the skeletal system.

Pituitary tumors have been diagnosticated clinically by finding, in association with the acromegaly syndrome, or with the Cushing syndrome, enlargement of the sella turcica on x-ray study of the base of the skull.

Kornblum and Osmund (13) found deformity of the sella turcica in all of seventy-four cases of such tumors.

Pituitary tumors seem to be fairly numerous once they are looked for. Costello (5) made a study of 1,000 pituitary bodies in order to determine the frequency of adenomata and the relative frequency of chromophobe adenomata, eosinophile adenomata and basophile adenomata. The material was collected in the course of routine necropsies over a period of years. There were 265 instances in which one or more adenomata were found in these pituitaries (26.5 percent). One hundred and forty of these adenomata were composed of chromophobe cells (52.8 percent); twenty of eosinophile cells (7.5 percent), seventy-two of basophile cells (27.2 percent); and thirty-three of mixed cells (12.4 percent).

Close (4) examined fifty pituitary bodies obtained at autopsy from patients dead of other diseases than cancer. He found five of these contained adenomata (10.0 percent). On the other hand, in 122 cases of death from carcinoma forty-nine of the pituitary bodies contained adenomata (40.16 percent). In cases of adenoma of the prostate, carcinoma of the pancreas, carcinoma of the rectum and carcinoma of the bronchus, more than 50.0 percent of the pituitaries contained adenomata.

Puestow (17) reported fifty cases of primary tumors of the pituitary body, 16.0 percent of which were malignant. Sixty percent of the remaining tumors were adenomata. Growth stimulation was found in cases of adenoma. In two cases of malignant tumors amenorrhea was noted.

Gardner, Strong and Smith (11) report the case of a large, thin female mouse, 695 days old, in a poor state of health. She had given birth to the last of her four litters 371 days previously. She died and the necropsy showed a chromophobe adenoma of the pituitary body, bilateral ovarian tumors resembling the granulosa cell tumors of the human ovary, and eight adenocarcinomata of the mammary glands.

MacCallum, Futcher, Duff and Ellsworth (16) report the case of a woman, aged 25 years, who complained of increasing weight, changed facial appearance and amenorrhea. In addition, dyspnea, palpitation, "ready fatigue," edema of both feet and both legs, polyphagia, polydipsia, polyuria, glycosuria and albuminuria, osteroporosis of the skull and of the vertebrae were brought out in the study of the patient. She died of general septicemia which originated as a staphylococcus infection of the right kidney. At autopsy a small tumor nodule was found on the inferior surface of the pituitary body which was diagnosticated adenoma of the pars intermedia.

Hare, Ross and Crooke (12) report the case of a single woman who complained of severe headache and vomiting, persistent metrorrhagia followed by amenorrhea, hirsutism of the male type with loss of scalp hair, greasy skin, an acneform eruption and striae atrophicae. These manifestations were associated with adiposity of the face, the neck, the shoulders and the trunk. The arms and the legs were slender. The patient developed a kyphosis, polycythemia (highest 7,620,000) and arterial hypertension (S. 205 mm.). A cortical carcinoma of the left suprarenal body was removed surgically, following which the patient died of shock in a few hours. At autopsy metastases were found in the liver, the lungs and the mediastinal and the peribronchial lymphnodes. The pituitary body was a little larger than normal, from the accumulation of colloid in the pars intermedia. On histological study there were very few ripe basophile cells. Instead of the basophile granules there was a dense, homogeneous hyaline cytoplasm. The chromophobe and the acidophile cells were normal in appearance.

Ewing (9) in a general review of modern clinical cancer research points out that acromegaly is the result of the action of various types of adenoma of the pituitary body; that the Cushing syndrome is attended with the existence of basophile adenoma; that in other cases of pituitary tumors infantilism of varying type is present; and that intermedin, the pigment-controlling hormone of the middle lobe of the pituitary body, is present in the blood and the urine of patients with melanoma.

The Influence of the Injection of Pituitary Gland Products Into Animals with Malignant Tumors

Tanzer (20), after experiments using sixty-five mice, reached the conclusion that prolan has no effect on the growth of transplantable mouse sarcoma 180 and that there is but slight inhibitory influence on mouse sarcoma 537. Particularly, there is no acceleration of the growth of mouse sarcoma 180.

Busse and Hoevener (3), after experiments on guinea pigs, concluded that there is no connection between genital carcinoma and the pituitary body. In fact, their experiments with injection of extracts of the hypophysis produced an atrophy of the uterine mucosa. They were unable to demonstrate any cancerous or precancerous lesion.

Krehbiel, Haagensen and Plantenga (14) injected the anterior pituitary hormone in sixty animals with transplanted mouse sarcoma 180. They found no specific or marked inhibitive action of these injections on the growth of the tumors.

Sugiura and Benedict (19) found that injection of aqueous extracts prepared from the whole pituitary body or from the anterior lobe had a slight, but distinctly stimulating, effect upon the growth of mouse melanoma and on that of the Sugiura rat sarcoma. There was no stimulating action observed when the Flexner-Jobling rat carcinoma, Jensen rat sarcoma, Bashford mouse carcinoma No. 63, Twort mouse carcinoma, Gye mouse sarcoma No. 37, or Rous chicken sarcoma No. 1 were used.

Ernst (7) treated six cases of advanced and inoperable carcinoma of the female genitalia with injection of the hormone of the anterior lobe of the pituitary body combined with irradiation. The patients were "much improved" after treatment with this combination.

However, Ewing, in the paper to which reference has already been made, says that the hormones of the pituitary body (the ovary and the testis), when injected, produce remarkable normal and abnormal overgrowth of the corresponding organs and some cancerous lesions have thus been produced.

The Effect of Hypophysectomy on the Development of Spontaneous and Experimental Tumors

Efforts to duplicate the effects of hypophysectomy by irradiation of the pituitary body do not seem to be effective.

Ball, Samuels and Simpson (1) found that in a group of albino rats, the majority of which were males, the growth rate of transplantable mammary carcinoma was greatly reduced if hypophysectomy was done before the transplant was made. They did not observe complete cessation of tumor growth, however. If hypophysectomy was done after the transplant had started to grow, they found an immediate retardation in its development.

In a second paper Samuels and Ball (18) report on further studies on hypophysectomized albino rats. The hypophysectomy was done three weeks before the transplants were made, and, in addition, one-sixth grain of thyroid substance was given twice a week. In thirty-four of the experimental animals only 6.0 per cent of the grafts took. In a control group of forty animals, 38.0 per cent of the transplants grew. The difference in tumor growth rate in the two groups, normal and hypophysectomized, occurred both with and without thyroid feeding and to the same degree. The sex of the animal had no bearing on the tumor behavior.

Samuels and Ball (18), in further experiments with Walker mammary carcinoma No. 256, found that hypophysectomy produced a greater retarding effect on the rate of growth of the transplants than pituitary irradiation. They conclude that when considered together with operative removal, the results of irradiation experiments furnish evidence of graduation of effect which contributes materially toward establishing the pituitary body as an influencing factor in tumor growth.

Ball and Samuels (1) selected forty-five albino rats of both sexes. They injected a solution of dibenzanthracene im olive oil, one mg. to one cc. every two weeks until seven mg. had been used, into these animals. When definite tumor nodules developed a part of the animals were submitted to hypophysectomy, the others were kept as controls. Thirty-three of the animals survived eight weeks, when the first tumor nodule was discovered. During the following nineteen weeks all the animals except two developed tumors and those two developed tumors after that. These tumors showed a definitely slower rate of growth following hypophysectomy

—Continued on page 556

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Edited by TASKER HOWARD, M.D.

CLASSICAL QUOTATIONS

● Bearing in mind that it is from the vitality of the atmospheric particles that all the mischief arises, it appears that all that is requisite is to dress the wound with some material capable of killing these septic germs, provided that any substance can be found reliable for this purpose, yet not too potent as a caustic.

Joseph Lister, Esq., F.R.S.; The Lancet. London, March 16, 1867; p. 326.

A New Psychiatric Textbook

THEORY AND PRACTICE OF PSYCHIATRY. By William S. Sadler, M.D. St. Louis, The C. V. Mosby Company [c. 1936]. 1231 pages. 4to. Cloth, $10.00.

Dr. Sadler, formerly professor at the Post-Graduate Medical School of Chicago and at present chief psychiatrist of the Chicago Institute of Research and Diagnosis, announces on the title page of the present work that it is "A Psychiatric Textbook for Neuropsychiatric Specialists and General Practitioners of Medicine. A Reference Handbook for Psychologists, Pastors, and Other Professional Readers." And this is a work that really lives up to its title in sharp distinction to so many that are put on the market labeled "For the general practitioner," that only a reader with considerable psychiatric training could possibly understand.

The work is extremely long but written in a clear, simple, concise style; it contains an enormous amount of information, yet it is all boiled down to the greatest degree consistent with the maintenance of interest. In addition to being clearly written, the work contains an excellent glossary and is splendidly indexed. There is a bibliography at the end of each chapter and a general one at the end of the book. An interesting and unusual feature of the work, which makes it of especial interest to the general practitioner, is the fact that of the twelve hundred odd pages that go to make up the book, over a thousand are devoted to the various types of neuroses, cases that are constantly being seen in every doctor's office. It is heartily recommended to anyone interested in the subject.

F. C. EASTMAN.

An Important New Text On Ophthalmology

THE EYE AND ITS DISEASES. By 82 International Authorities. Edited by Conrad Berens, M.D. Philadelphia, W. B. Saunders Company, [c. 1936]. 1254 pages, illustrated. 8vo. Cloth, $12.00.

Ever since the death of Fuchs, the ophthalmological profession has felt the need for some comprehensive text that would reflect the broadening sphere of this exacting specialty. This new book by Berens and his 82 collaborators fills the requirements of the progressive specialist.

One cannot comment on this book without involving himself in superlatives. Topics that would ordinarily be treated as separate monographs, such as Injuries to the Eye, or Surgery of the Eye, have been treated in comprehensive and scholarly fashion by authorities who have won renown in their respective specialized fields. The bibliographies following each of the many chapters are thorough and valuable. The subject of orthoptics, hardly dealt with in textbooks on ophthalmology, has been reviewed in a convincing and prac-

tical manner. Throughout the text the reader constantly feels that the editor has been ultra-cautious in the selection of his contributors and their material, including the illustrations. All this has been arranged into a sequential and harmonious text.

Dr. Berens and his associates have made a worthy contribution to the cause of ophthalmology and medicine with this fine textbook.

EMANUEL KRIMSKY.

Stander's Revision of Williams' Obstetrics

WILLIAMS' OBSTETRICS. A Textbook for the use of Students and Practitioners. By Henricus J. Stander, M.D. Seventh edition. New York, D. Appleton-Century Company [c. 1936]. 1269 pages, illustrated. 8vo. Cloth, $10.00.

This long awaited revision of Williams' famous text-book by his brilliant pupil, now professor of gynecology and obstetrics at Cornell, is a very creditable piece of work. Only slightly larger than the sixth edition, three chapters have been added. As perfect typographically as heretofore, the familiar red binding has been changed to blue; and there are some new illustrations and graphic charts.

The chapter on anesthesia is excellent, and the modern treatment of asphyxia is very well done. It is particularly gratifying to note criticism of hot and cold tubbing and the omission of the illustration of Schultze's time worn method of resuscitation. The bacteriology of puerperal infection is comprehensively treated. It is interesting to note that in the pages describing the treatment of placenta previa hardly a word has been changed, although the last revision appeared six years ago. Those interested in the treatment in vogue at Cornell will find it throughout this volume, which is just as fine a text-book for the serious student as it ever was.

CHARLES A. GORDON.

About Intravenous Therapy

PARENTERAL THERAPY. A Ready Reference Manual of Extra-Oral Medication for Physicians, Dentists, Pharmacists, Chemists, Biologists, Nurses, Medical Students and Veterinarians. By Walter F. Dutton, M.D. and George B. Lake, M.D. Springfield, Charles C. Thomas, [c. 1936]. 386 pages, illustrated. 4to. Cloth, $7.50.

One approaches this attractive volume with a certain degree of expectancy. The print makes reading easy, the illustrations are profuse and well legended and the subdivisions are logical. This comment has reference to many portions of Part 1. That a number of the procedures so profusely illustrated are familiar to every recent hospital graduate, does not render them altogether superfluous. To many physicians in practice, especially in rural communities, they will serve a most welcome and useful guide.

Although the technical transfer of blood from donor to recipient is described in great detail, the parts pertaining to indications and classification are treated in too superficial a manner. The technique of blood typing and contra-indications to transfusions are omitted. The authors' preference for the Medical Center outfit, Lindemann's method and the Lewisohn technic for citrate transfusion is clearly indicated. The subject of transfusion, it seems, deserves more than 9 pages of description, considering its scope and importance in every day clinical medicine.

A review of Part 2, Therapeutic Index, comes as an anticlimax, and is practically nothing more than a catalogue list of proprietaries, the clinical value of many never having been established. The authors here merely repeat the fanciful advertising claims made by pharmaceutic manufacturers.

An acceptable text or reference book on this subject cannot expect to meet with general approval if it contains under the treatment of cancer a list of seventeen drugs; twenty-seven for epilepsy, twenty for erysipelas and twenty-six for gonorrhoea, to say nothing of the claims of "pluriglandular" products. One does not require a text book for this type of therapeutics; second class mail brings to every doctor's office this same literature.

Furthermore there appears on page 343 under "Appendix to the Pharmacologic Notes" a statement to the effect that because of the rapidity with which these drugs appear "it is always impossible that any such (text) book can be strictly up to the minute when it appears in covers." An admission that these fly-by-night drugs are foisted on the medical profession with such speed that it is impossible even to catalogue them.

The profession cannot encourage the use of irrational and unscientific preparations for they tend to increase the chaotic state of drug therapy and add to the confusion of physician and student.

S. R. BLATTEIS.

Physiotherapy For the Nurse

PHYSICAL THERAPY FOR NURSES. By Richard Kovács, M.D. Philadelphia, Lea & Febiger, [c. 1936]. 286 pages, illustrated. 8vo. Cloth, $2.75.

It is not sufficient that the physician alone be trained in physical therapy technic nor is it desirable that the present promiscuous use of physical therapeutic measures by the laity be continued. The best solution to the problem would be to train our nurses to carry out the prescribed treatments without themselves prescribing them. With this end in view, Dr. Kovacs has written a most excellent work which could well be included in the nurses' required study in regular training. Physical therapy is now used so extensively and in so many branches of medical practice that the graduate nurse will frequently make use of her training in the subject.

The book is well written and illustrated and is clearly printed and strongly bound. So complete is the detail of the text that it could well serve as an introduction to physical therapy for the medical student as well as being an excellent handbook for the graduate and undergraduate nurse.

JEROME WEISS.

British Therapy

TREATMENT IN GENERAL PRACTICE. The Management of Some Major Medical Disorders. (Article Republished from the British Medical Journal). New York, Paul B. Hoeber, Inc., [c. 1936]. 250 pages. 8vo. Cloth, $3.50.

This is a very nice small book by some of the leading English writers. Diagnostic and other aspects of disease are discussed quite fully in addition to methods of treatment.

Diseases of the respiratory and cardiovascular systems with a discussion of some of the acute specific fevers are presented in a very readable and satisfactory manner.

W. E. MCCOLLOM.

A New Edition of Conant's Chemistry

ORGANIC CHEMISTRY. A Brief Introductory Course. By James Bryant Conant. New York, The Macmillan Company, [c. 1936]. 293 pages, illustrated. 8vo. Cloth, $2.60.

Since the appearance of the first edition of this book, the author has become president of Harvard University. He naturally and importunately has less time for chemistry. The present volume was revised with the assistance of Dr. Max Tishler.

The author has succeeded in doing what he intended to with this book. He recognizes the difficulty of presenting a stimulating approach to organic chemistry for the beginner, especially because of the bewildering array of facts and formulas which it must contain. One notes in the development of the book that the author is possessed of that rare combination of knowing his subject thoroughly and being an excellent teacher. This book should meet with the requirements of preparing the medical student in organic chemistry.

W. S. COLLENS.

Balancing the Diet—Clendening

THE BALANCED DIET. By Logan Clendening, M.D. New York, D. Appleton-Century Company, [c. 1936]. 207 pages, illustrated. 12mo. Cloth, $1.50.

This book written on the subject of nutrition employs the same popular style of presentation of material used in his other books. The author deftly traces the history of dietetics and shows how all sciences have had a hand in promoting the knowledge of foods. The physician utilizes this knowledge in both therapeutic and preventive medicine.

Many of the fad diets which acquired such popular favor are thoroughly discussed and their fallacy shown from a scientific viewpoint. The chapter on metabolism gives a clear understanding of the measurement of food energy and calories as well as the various basic food elements required for body maintenance.

A portion of the book is devoted to diet in various diseases and here the author discusses symptoms and treatment, and in some instances gives suggestions for drugs. In the opinion of the reviewer, popular books on diet should not discuss diagnosis or treatment of disease and give specific drug suggestion. Such advice invariably leads to self diagnosis and treatment with their dangerous results. With this exception, the book may be recommended for popular use on the subject of dietetics.

MORRIS ANT.

Thomson-Walker's Urology Revised

SURGICAL DISEASES AND INJURIES OF THE GENITO-URINARY ORGANS. By Sir John Thomson-Walker, F.R.C.S. Second edition, revised. Edited by Kenneth Walker. Baltimore, William Wood and Company, [c. 1936]. 974 pages, illustrated. 8vo. Cloth, $10.00.

It is very gratifying that the valuable and authoritative text-book of Sir John

Thomson-Walker has been reedited. The other edition, published in 1914, was one of the best of its kind and the reviewer referred to it many times with profit since that date.

To Dr. Kenneth Walker much credit is due in stimulating and aiding the author to rewrite and extend the work and bring it up to date. It appears that the many demands upon the author's time during, and since the World War had long deferred this important contribution. Dr. Kenneth Walker has also added four new chapters.

The extension and development of urologic knowledge is impressively shown in comparing the old and new edition. This is particularly signified in the perfection of diagnostic procedures and interpretations in the field of retrograde pyelography and intravenous urography.

The book is fully illustrated with many new figures also with fifty-eight full-page plates. The work plainly indicates the basic scientific nature of the author. Each part is divided by regions opening with the surgical anatomy of the given part. There is a wealth of new material with references to the literature listed at the end of each chapter. Though primarily intended for the general practitioner, there is much of interest and value to the urologist as well as those in other related fields.

It is hard to conceive of a more complete storehouse of knowledge included within the covers of a single-volume work.

AUGUSTUS HARRIS.

A New Edition of Operative Surgery

THE OPERATIONS OF SURGERY. By R. P. Rowlands, F.R.C.S., and Philip Turner, F.R.C.S. Eighth edition, volume 1. Baltimore, William Wood & Company, [c. 1936]. 1045 pages, illustrated. 4to. Cloth, $10.00.

In reviewing this book, its distinguished ancestor is recalled. It is a direct descendent of Jacobson's Operations of Surgery which first appeared in 1889 and through its later years has always received favorable criticisms as recalled by this commentator. London and British Surgery has unfortunately lost R. P. Rowlands who guided the work through the last three editions and had completed up to the time of his death, chapters on Peritonitis, Operations on the Stomach and Duodenum, Visceroptosis and Chronic Constipation, also Operations on the Intestines. Ogilvie, Masson and Thompson have completed unfinished portions which were allotted to him. The main objects of this largely re-written and revised edition have been well achieved. Only important and well recognized operations have been described in certain special departments of surgery such as otology, laryngology, gynecology, orthopedics and surgery of the nervous system. In the preface it is well stressed that surgery is too serious to be undertaken lightly. The surgeon should never forget that he holds the life, health and happiness of the patient in his hands; that he is bound to give his best service but can not do this until he has devoted himself to years of study and has mastered both the art of surgery and the science of surgery. A few may possess natural intellectual capacity, courage, manual dexterity and sympathy, all of which are necessary to the making of a good surgeon; but even such natural gifts are likely to remain undeveloped without intelligent and untiring preparation, constant practical training and study. A fact sometimes overlooked is that technical skill by itself may even be dangerous without the guidance of adequate knowledge and sound judgment. Operations often seem from watching and reading about them to be easier than they are, thus leading the inexperienced and unwary to attempt more than they can manage. Comparatively slight errors of judgment may then have unfortunate and serious consequences. This book will help readers to acquire better knowledge of technique, indications and contra-indications of surgery. Special attention is accorded errors and difficulties of the experienced as well as of the beginner.

R. H. FOWLER.

A Good Book on Adolescence

PSYCHOLOGY OF ADOLESCENCE. By Luella Cole, Ph.D. New York, Farrar & Rinehart, [c. 1936]. 503 pages. 8vo. Cloth, $3.50.

This book is written for high school teachers and, in places at least, gives advice for educational administrators. The author has not only knowledge, but understanding and appreciation of adolescents and their psychic problems, and she carries out very well the third intention of her preface: "to make the book as useful as possible." We wish every high school teacher might read it.

While not written for him, we think that any physician whose duties call him to guide whole families, or the children of

them, could use the time necessary to read this book with great profit. It gives him an attitude away from his usual reading. The writer is writing of normal adolescents and their psychology, but inevitably the problems run into—and beyond—border line cases as, e. g., hypothyroids, and these receive proper discussion.

Also, as in anatomy and physiology, the physician must know the norm to appreciate the abnormal.

We cordially recommend the book.

WALTER D. LUDLUM.

Harvey Society Lectures

THE HARVEY LECTURES. Delivered under the auspices of The Harvey Society of New York, 1934-1935. Series XXX. Baltimore, The Williams & Wilkins Company, [c. 1936]. 270 pages, illustrated. 8vo. Cloth, $4.00.

The 1934-35 series has maintained the usual high standard of lectures for the Harvey Society. Castle in an interesting paper on "The Etiology of Pernicious Anemia" discusses his most recent work on the intrinsic factor in this disease. A paper by William Rose on "The Significance of Amino Acids in Nutrition" discusses the role of such indispensable amino acids as lysin, tryptophan, cystine and histidine. "Urine Formation in the Amphibian Kidney" is discussed by Richards. This brilliant author has made an intensive study of the frog kidney which is especially suitable for differential investigation of glomerular and tubular functions, because of their separate blood supplies. He shows that the glomerular urine is the same as protein-free blood plasma and supports the theory that the urine secretion is a filtration phenomenon, while the function of tubular urine is associated with the reabsorption of water, sodium chloride, glucose and a concentration of phosphates, urea and creatinne. Dodds' fascinating lecture on "The Specificity of Hormones" gives a historical survey of the isolation, chemical identification and final synthesis of estrogenic substances and related compounds, showing the activity of these various substances. He discusses the chemistry of phenanthrenes and the close relationship between estrogenic, carcinogenic and anti-rachitic compounds. Anrep's lecture on "Circulation in Muscles" places special emphasis on coronary circulation. He shows, by means of an ingenious device, called the hot-wire method, that during contraction there is a marked diminution in the blood flow through the capillaries and venules with even a backward move of blood in arteries. He also shows that after contraction, with the state of relaxation, there occurs a marked increase in blood, much above the resting level. This phenomenon can be explained on the basis of reactive hyperemia which is a vasodilator resulting from the activity of an H-substance, elaborated by the tissues during the period of muscle contraction.

WILLIAM S. COLLENS.

Alfred Hess' Writings

COLLECTED WRITINGS ALFRED F. HESS. In two volumes. Springfield, Charles C. Thomas, [c. 1936]. 4to, illustrated. Cloth, volumes 1 and 2, $15.00.

The collection of the writings of this great pediatric scientist into two rather large volumes furnishes a valuable addition to pediatric literature. A few years after his graduation from medical school in 1901, Dr. Hess began his writings. His earlier subjects were upon various pediatric topics; however, he soon went into the investigative field to which he devoted most of his time until his death in 1933. His books on scurvy and later, rickets, brought up to date facts on these diseases to the profession. Much of his work on dental caries, bone pathology, ergosterol, ultraviolet light, thromboplastin, vitamin D milk, etc., represents original investigation.

Everyone interested in any of the above subjects should keep in mind these invaluable volumes.

THURMAN B. GIVAN.

Another Popular Endocrinology

YOUR GLANDS AND YOU. By Henry S. Williams, M. D. New York, Robert M. McBride & Company, [c. 1936]. 187 pages, 12mo. Cloth, $1.75.

This is another popular treatise on the fashionable topic of endocrinology. It is well written, quite careful in its statements, and reveals commendable understanding of the difficulties that confront the physician who tries to correlate recent advances in endocrine physiology with some of the puzzling problems of clinical medicine. No popular book, however well written, can be of much help to the practising physician, while it seems to presuppose too much knowledge of biochemistry and physiology to be of great value to the educated layman.

M. A. GOLDZIEHER.

A New Book On Diagnosis

SYMPTOMS AND SIGNS IN CLINICAL MEDICINE. An introduction to medical diagnosis. By E. Noble Chamberlain, M.D. Baltimore, William Wood and Company. [c. 1936]. 424 pages, illustrated. 8vo. Cloth, $8.00.

Much has been compressed between the covers of this 400 page volume. The external characteristics of disease are discussed in about fifty pages. This section is illustrated by forty-eight photographs. Then follow sections on the respiratory, cardio-vascular, urinary, digestive and hemopoietic systems. About one hundred and ten pages are devoted to the nervous system. This is well presented and well illustrated, and is followed by a chapter on fever. About twenty-five pages are devoted to the examination of sick children. Medical operations and instrumental investigations as paracentesis of the pleura, pericardium and abdomen, lipiodol injections of the bronchi, and lumbar puncture are then discussed. For good measure a section on clinical pathology and biochemistry concludes the volume.

Of course the material presented is too vast to permit of anything more than a sketchy presentation in many instances. For a broad synopsis and a hasty review this volume might find a place for a busy practitioner.

HENRY JOACHIM.

Another Child Care Manual

THE BABY AND GROWING CHILD. Feeding and Health Care for Physicians, Mothers, and Nurses. By Louis Fischer, M.D. New York, Funk & Wagnalls Co., [c. 1936]. 260 pages, illustrated. 12mo. Cloth, $1.50.

The material in this book has been well organized in the traditional manner of books on pediatrics. While the author's attempt to "write down" to the laity for the sake of simplicity and clarity has been reasonably successful, there has been a distinct loss in the quality of the writing.

The illustrations are very good, but are not enhanced by the notations of commercial firms which the author favors.

CHARLES A. WEYMULLER.

Hinton On Syphilis

SYPHILIS AND ITS TREATMENT. By William A. Hinton, M.D. New York, The Macmillan Company [c. 1936]. 321 pages. 8vo. Cloth, $3.50.

This book covers the field of syphilis in a very satisfactory manner. The make-up is to be commended. After a brief history, the parasite and its response in the host is discussed. Then the diagnosis together with the laboratory tests are described. Following this the traditional three stages are taken up in order. Separate chapters are devoted to the spinal fluid in syphilis, marriage in syphilitics and congenital syphilis. The remainder of the book is devoted to an evaluation of drugs used in the treatment and various plans of therapy.

The index is exceptionally complete, making it a very good book of reference. The discussion of special features is short and to the point and seems to cover the subject adequately. On the whole, we can thoroughly recommend this book to all except the man who desires the minutest detail.

JOHN C. GRAHAM.

Sketch of Medical Philosophy

THE HISTORY OF THE PHILOSOPHY OF MEDICINE. By L. A. Turley. Norman, University of Oklahoma Press, [c. 1935]. 43 pages. 8vo. Paper, $.50.

This is a brochure of interesting reading, in which the author begins by defining the term philosophy in its original meaning as a "love of knowledge." He modifies this to mean "the aim which determines the course or purpose of actions of a person or a group of persons." He then proceeds to study the leading philosophies of the ages with special regard to their effect on the course and character of medical thought. This takes him from the time "when man first stood on his hind legs" and spirits pervaded common objects, through the various periods of recorded history. He emphasizes the profound effect of the various religions, and the final emancipation from dogma, with the advent of the Renaissance. Much history is crowded into small space. It is a scholarly performance.

J. M. VAN COTT.

BOOKS RECEIVED

Books received for review are acknowledged promptly in this column; we assume no other obligation in return for the courtesy of those sending us the same. In most cases, review notes will be promptly published shortly after acknowledgment of receipt has been made in this column.

A TEXTBOOK OF OBSTETRICS. By Edward A. Schumann, M.D. Philadelphia, W. B. Saunders Company, [c. 1936]. 780 pages, illustrated. 8vo. Cloth, $6.50.

A TEXT-BOOK OF PHARMACOLOGY AND THERAPEUTICS OR THE ACTION OF DRUGS IN HEALTH AND DISEASE. By Arthur R. Cushny, M.D. Eleventh edition, thoroughly revised by C. W. Edmunds, M.D. and J. A. Gunn, M.D. Philadelphia, Lea & Febiger, [c. 1936]. 808 pages, illustrated. 8vo. Cloth, $6.50.

ROENTGEN INTERPRETATION A MANUAL FOR STUDENTS AND PRACTITIONERS. By George W. Holmes, M.D. and Howard E. Ruggles, M.D. Fifth edition, thoroughly revised. Philadelphia, Lea & Febiger, [c. 1936]. 356 pages, illustrated. 8vo. Cloth, $5.00.

ORAL DIAGNOSIS AND TREATMENT PLANNING. A Text for the Dental Student, A Reference Book for the Practitioner and Medical Student. By Kurt H. Thoma, D.M.D. Philadelphia, W. B. Saunders Company, [c. 1936]. 379 pages, illustrated. 8vo. Cloth, $6.00.

THE CLINICAL USE OF DIGITALIS. By Drew Luten, M.D. Springfield, Charles C. Thomas, [c. 1936]. 226 pages. 8vo. Cloth, $3.50.

LIVE LONG AND BE HAPPY. How to Prolong Your Life and Enjoy it. By Lewellys F. Barker, M.D. New York, D. Appleton-Century Company, Inc., [c. 1936]. 224 pages. 12mo. Cloth, $2.00.

PRINCIPLES OF BIOCHEMISTRY. By Albert P. Mathews. Baltimore, William Wood & Company, [c. 1936]. 512 pages, illustrated. 8vo. Cloth, $4.50.

RESEARCH IN DEMENTIA PRECOX. (Past Attainments, Present Trends and Future Possibilities). By Nolan D. C. Lewis, M.D. New York, The National Committee for Mental Hygiene, [c. 1936]. 320 pages. 8vo. Cloth, $1.50.

A TEXTBOOK OF SURGERY. By John Homans, M.D. Fourth edition. Springfield, Charles C. Thomas, [c. 1936]. 1267 pages, illustrated. 4to. Cloth, $8.00.

ELEMENTS OF ELECTROCARDIOGRAPHIC INTERPRETATION. By Louis N. Katz, M.D. and Victor Johnson, Ph.D. Second edition. Chicago, The University of Chicago Press, [c. 1936]. 38 pages, illustrated. 8vo. Paper, $1.00.

THE 1936 YEAR BOOK OF RADIOLOGY. Diagnosis edited by Charles A. Waters, M.D., Therapeutics edited by Ira I. Kaplan, M.D. Chicago, The Year Book Publishers, Inc., [c. 1936]. 604 pages, illustrated. 8vo. Cloth, $4.50.

CONQUEST OF GOITER. By Emilian O. Houda, M.D. Tacoma, Conrad Printing Company, [c. 1936]. 157 pages, illustrated. 16mo. Cloth.

SO YOU'RE GOING TO A PSYCHIATRIST. By Elizabeth I. Adamson, M.D. New York, Thomas Y. Crowell Company, [c. 1936]. 263 pages. 8vo. Cloth, $2.50.

FAVOURITE PRESCRIPTIONS. Edited by Sir Humphry Rolleston, M.D. and Alan A. Moncrieff, M.D. London, Eyre & Spottiswoode, Ltd., [c. 1936]. 227 pages. 8vo. Cloth, 10/6.

BAILEY'S TEXT-BOOK OF HISTOLOGY. (Elwyn and Strong). Revised and rewritten by Philip E. Smith, Ph.D. Ninth edition. Baltimore, William Wood and Company, [c. 1936]. 773 pages, illustrated. 8vo. Cloth, $6.00.

BRITISH MASTERS OF MEDICINE. Edited by Sir D'Arcy Power, F.R.C.S. Baltimore, William Wood and Company, [c. 1936]. 242 pages, illustrated. 8vo. Cloth, $3.00.

UROLOGY. By Edward L. Keyes, F.A.C.S., F.R.C.S. and Russell S. Ferguson, M.D. Sixth edition. New York, D. Appleton-Century Company, [c. 1936]. 707 pages, illustrated. 4to. Cloth $10.00.

TEXTBOOK OF GENERAL SURGERY. By Warren H. Cole, M.D. and Robert Elman, M.D. New York, D. Appleton-Century Company, [c. 1936]. 1031 pages, illustrated. 8vo. Cloth, $10.00.

MODERN UROLOGY IN ORIGINAL CONTRIBUTIONS BY AMERICAN AUTHORS. Edited by Hugh Cabot, M.D. Third edition, two volumes. Philadelphia, Lea & Febiger, [c. 1936]. Illustrated. 8vo. Cloth, $20.00.

A PRACTICAL MEDICAL DICTIONARY. By Thomas Lathrop Stedman, M.D. Thirteenth, revised edition with the new British Anatomical Nomenclature. Baltimore, William Wood and Company, [c. 1936]. 1291 pages, illustrated. 8vo. Cloth, $7.00; $7.50 with thumb index.

A DISSERTATION ON THE SENSIBLE AND IRRITABLE PARTS OF ANIMALS. By Albrecht von Haller. [London, J. Nourse, 1755]. Introduction by Owsei Temkin. Baltimore, The Johns Hopkins Press, [c. 1936]. 49 pages. 4to. Paper, $1.00.

BRIGHT'S DISEASE AND ARTERIAL HYPERTENSION. By Willard J. Stone, M.D. Philadelphia, W. B. Saunders Company, [c. 1936]. 352 pages, illustrated. 8vo. Cloth, $5.00.

THE MEDICAL CLINICS OF NORTH AMERICA. Volume 20, number 2. (St. Louis Number). September, 1936. Issued serially, one number every other month by the W. B. Saunders Company, [c. 1936]., Philadelphia, 685 pages. 8vo. Per clinic year (6 nos.) Paper $12.00, Cloth, $16.00.

THE INTELLECTUAL FUNCTIONS OF THE FRONTAL LOBES. A Study Based Upon Observation of a Man After Partial Bilateral Frontal Lobectomy. By Richard M. Brickner, M.D. New York, The Macmillan Company, [c. 1936]. 354 pages. 8vo. Cloth, $3.50.

EUGENICAL STERILIZATION. A Reorientation of the Problem. By The Committee of the American Neurological Association for the Investigation of Eugenical Sterilization. New York, The Macmillan Company, [c. 1936]. 211 pages, illustrated. 8vo. Cloth, $3.00.

RECOLLECTIONS OF RICHARD DEWEY PIONEER IN AMERICAN PSYCHIATRY. An Unfinished Autobiography with an Introduction by Clarence B. Farrar, M.D. Edited by Ethel L. Dewey. Chicago, The University of Chicago Press, [c. 1936]. 173 pages, illustrated. 8vo. Cloth, $2.00.

UROLOGICAL ROENTGENOLOGY. A Manual for Students and Practitioners. By Miley B. Wesson, M.D. and Howard E. Ruggles, M.D. Philadelphia, Lea & Febiger, [c. 1936]. 269 pages, illustrated. 8vo. Cloth, $5.00.

THE ART OF TREATMENT. By William R. Houston, M.D. New York, The Macmillan Company, [c. 1936]. 744 pages. 8vo. Cloth, $5.00.

BUGS TO BURN

"You see that old boy over there? He thinks in terms of millions."

"He doesn't look to me like a financier."

"He isn't. He's a bacteriologist."—*Karikaturen.*

Cultural Medicine

OLD TRAILS

V

An efficient system of sanitation was shown by Jamaica (West Indies) to be the best way of dealing with yellow fever, that is, prior to Walter Reed's work of 1890-1900 in Cuba and the Havana screening operations of Major W. C. Gorgas, in 1901, against *Stegomyia calopus*. Practically, however, the disease made many inroads throughout the century into the Southern States, causing heavy economic losses. To the nineteenth century, however, belongs the credit of fixing attention upon the transmitting mosquito (Carlos Finlay, Nott and Daniel).

The bacteriological elucidation of plague, the worst of the ancient infections, by Kitasato and Yersin in 1894, led to successful serum therapy in 1896 and Haffkine's vaccine in 1897, which gave the century and posterity the means of checking, limiting, and ultimately of eradicating, the "black death" of the Middle Ages.

The closing years of the nineteenth century saw a great gain in society's resistance to tuberculosis. From 1856 to 1860 the general death rate from this disease was 2,565 per million, and from 1891 to 1893 the rate was 1,512 per million—a reduction of 41 per cent. In Massachusetts, 1895 saw the mortality cut in half as compared with 1853, an interesting local instance of accomplishment. This decline in mortality in the course of the nineteenth century was not the result of any crusade, since it began before the discovery of the germ in 1882 and before the advent of improved methods of diagnosis and treatment, but was due to better living conditions effected by higher standards, greater emphasis on general hygiene, the improved economic situation, improved nutrition, and better working conditions.

The later nineteenth century registered a great advance in the management of diphtheria, reducing its prevalence and mortality remarkably. This improved control was due to the assiduous search for mild cases, careful isolation, thorough disinfection of garments, etc., watchfulness during convalescence, and the use of antitoxin. Better attention to tonsillar and dental potentialities in well children was also a large prophylactic factor.

Although it cannot be said that anything was accomplished in the nineteenth century looking to a reduction in the prevalence and mortality of pneumonia, the patients of its last quarter were not drugged and bled to death, as in preceding periods—an achievement in judicious therapeutic restraint, at least.

By the close of the nineteenth century Pasteur's method of inoculation against rabies had reduced the mortality of hydrophobia to less than one-half per cent.

The discovery in 1880 by Laveran (1845-1922), a French army surgeon, of the *Plasmodium malariæ*, the further discovery in 1897 by Ross (1857-1932) of how the malaria mosquito (*Anopheles*) transmits the disease, the demonstration that screening of both sick and well and drainage of marshy districts limit infection, and the elucidation of how and why quinine, properly used, vanquishes the disease, led in the nineteenth century to a knowledge of how to remove one of the great barriers to tropical colonization and exploitation. These notable advances helped to make the world of the later nineteenth century safe for economic imperialism.

In 1884 Franz Crédé introduced his preventive treatment of ophthalmia neonatorum, consisting in the application to the conjunctivae of a few drops of a 2 per cent solution of nitrate of silver immediately after birth. This method made ophthalmia neonatorum infrequent in lying-in hospitals and in private practice wherever employed. Through this means the proportion of total

blindness from gonorrheal infection was greatly reduced before the close of the century (at the present writing it is estimated that there has been a further reduction in the course of the past twenty-five years of 66⅔ per cent!)

A crowning achievement of the nineteenth century was the final acceptance of the views of Oliver Wendell Holmes (1809-1904) and Semmelweis (1818-1865) regarding childbed fever and the application of their principles, plus what had been learned through Lister and his theories of antisepsis. For the result was a reduction in the mortality from ten per cent to three-tenths per cent.

It remains to say something about the revolution in medical treatment which the nineteenth century witnessed. Osler cites the case of typhoid fever, which in the first and second quarters of the century was treated by bleeding, blistering, purging, vomiting and dosing with mercury and antimony. After 1850 there was less bleeding and drugging. During the last quarter of the century the disease was treated, generally, by dieting, nursing and hydrotherapy.

Homeopathy gave a death blow to polypharmacy, and the new school pinned its faith to a few good and well-tried drugs—quinine, iron, mercury, potassium iodine, opium, and digitalis.

Scientific pharmacology introduced active principles in the place of crude drugs, and the art of making medicine palatable progressed rapidly.

The nineteenth century drug chronology, considering only outstanding contributions, runs about as follows:

1852. Cocaine discovered by Niemann.
1875. Sodium salicylate (Kolbe's synthesis).
1876. Salicylic acid isolated by Kolbe.
Eserine (physostigmine) used in glaucoma by Lacqueur.
1878. Saccharin (Falberg).
1879. Homatropine (Landenberg).
1881. Ichthyol. (Schroeter).
1884. Cocain introduced into ophthalmology by Köller.
Antipyrine (Knorr-Filehne).
Sulphonal discovered by Baumann (see 1888).
1885. Strophanthus (Fraser).
1886. Salol (Nencki).
Acetanilid (Cahn and Hepp).
Resorcin (Unna).
Ichthyole introduced by Unna.
1888. Trional and tetronal (Baumann-Kast).
Sulphonal introduced into medicine by Kast.
1894-5. Suprarenal extract (Oliver and Schafer).
1896. Eucaine (Vinci and Merling).

Natural methods of treatment came much into vogue in the nineteenth century—diet, exercise, hydrotheraphy and massage. It came to be realized by the intelligent few that food intemperance had more to do with arterial and renal disease than did alcohol. Alcoholism, in fact, showed a reduction in the United States with the introduction of light beer, and if the food intemperance could have been lessened as was alcoholism great gain would have followed for preventive medicine.

The exercise craze lessened morbidity and mortality in those under forty but increased them in older persons.

The development of nursing after 1873, when "Sairey Gamp" was still at large, was phenomenal. The certified or registered nurse finally came to practice an art, and she was a big factor in public health work, hospital and industrial administration, obstetrics and gynecology, welfare work, and in the general medical care of the sick. She was not only a public benefactor but lightened the anxieties of the physician enormously, and easily doubled his availability.

Organotherapy was old in Roman days, but it remained for the nineteenth century to stage miracles in the treatment of such conditions as cretinism and myxedema through the administration of glandular products. George R. Murray of Newcastle-on-Tyne inaugurated the new endocrine era by curing myxedema with hypodermic injections of thyroid extract (1891).

The nineteenth century was a millenial era for those who essayed psychical methods of cure. Viewed dispassionately, as is now possible, the good reflex effect of the work of those not within the ranks of the medical profession was in some cases considerable. "In all ages the prayer of faith has healed the sick, and the mental attitude of the suppliant seems to be of more consequence than the powers to which the prayers are addressed" (Osler).

All the fundamental advances that we have chronicled were taken full advantage of by the nineteenth century clinicians. That company of supermen gave an account of themselves stupendous *in toto* and

glorious even in detail. The limits of our little story preclude a calling of the roll, but they are, for the most part, enshrined in the incomparable work of Garrison.

In chemistry the outstanding figures were von Liebig (1803-1873) and von Pettenkofer (1818-1901).

As Bichat endowed the opening century with his histology, so Rudolf Virchow (1821-1902) gave to the later years of the century his cellular pathology. Schleiden (1804-1881) had elucidated plant cells and Schwann (1810-1882) animal cells. It was Schwann who formulated the *cell theory*. To Virchow the body was "a cell State in which every cell is a citizen." Disease was civil war. The white blood corpuscles were the body's policemen and soldiers—an idea to be greatly extended by Elie Metchnikoff (1845-1916) and Sir Almroth Wright (1861-).

Morgagni started with the organs, Bichat progressed to the tissues, Virchow entered the cells, founding the new sciences of cytology and cytopathology, which led directly into the labyrinth of cancer, where we still wander confusedly, awaiting new pathfinders and deliverers, who will surely come.

—To be continued

ASSOCIATED PHYSICIANS OF LONG ISLAND

Annual Meeting, Saturday, January 30th, 1937, at the St. John's Hospital, Brooklyn

10:30 A.M. to 1:00 P.M.—Operative Clinics by Surgical, Obstetrical and Gynecological Staffs:
Dr. John E. Jennings—Dr. S. Lloyd Fisher
Dr. Stanley B. Thomas—Dr. James L. Cobb
Dr. Augustus Harris—Dr. Cameron Duncan
Dr. Alfred W. White.

1:30 P.M.—Luncheon. Guests of the Hospital.

2:30 P.M.—Pathological Conference Museum—Dr. Theodore Curphey.

3:00 P.M.—Scientific Session—Case Reports, Short Papers, Discussions by members of Medical, Pediatric and Neurological Services to be announced later.

6:30 P.M.—Dinner—Hotel Granada.

Editorial

The Accident Toll

—Concluded from page 512

is clear that a "pep" campaign is needed here.

We are uncertain as to the recent suggestion of Dr. Byron Stookey, of New York, that all gas stations be equipped to render first aid. On the one hand this might be regarded as weak humanitarianism, while on the other hand it might aid in the better organization of our great national sport of highway killing. It would seem to be in line with the best football and workmen's compensation practice—to see that the accidents occur but mop up as a routine, which policy cannot be said to have decreased casualties.

The only catch in all this is that the sadist himself may be the next victim. Yet even this does not give him pause in his great zest for accidents.

Peace must have its bulletins no less than war.

When the machine gun is silent there must be an equivalent.

When William James sought a substitute for war there were no automobiles.

Perhaps the world is deterred just now from another war because it has something almost as good.

But what of the war in Spain? someone will ask. Well, there are but few cars there. War has therefore been necessary.

We have a high accident rate because we wish to have it, in our big American way.

But we must quicken the pace!

Proceedings

IN ABSTRACT OF THE JANUARY 30, 1936 MEETING OF THE

SOCIETY OF PLASTIC AND RECONSTRUCTIVE SURGERY

Academy of Medicine of Northern New Jersey, Newark, N. Y.

Presentation of Cases:

1. **Laryngeal Repair.**
   Henry B. Orton, M. D.
2. **Various Types of Skin Grafts.**
   Lyndon A. Peer, M. D., Newark, N. J.
3. **Partial Restoration of the Lower Eyelid.**
   Arthur Sherman, M. D., East Orange, N. J.
4. **Types of Facial Repair.**
   Jacques W. Maliniak, M. D., New York, N. Y.
5. **Formation of the Dermal Graft.**
   Clarence R. Straatsma, M. D., New York, N. Y.

DERMAL GRAFTS

LYNDON A. PEER, M.D.
Newark, N. J.

Four cases were presented with plastic repairs by dermal grafts. Three of these cases were deep depressions of the forehead resulting from the removal of both tables of the frontal sinuses and a large area of the adjacent frontal bone. A pattern was made of the defect in the forehead and a large graft taken from the thigh corresponding to the pattern. This graft consisted of skin, fat, and fascia lata. The epidermis was removed from the surface of the graft and the graft inserted beneath the scalp skin, with the fascia lata next to the dura and the dermis beneath the scalp flap. All of these transplanted dermal grafts with their fat and fascia lata healed in their new locations and after some absorption gave a very satisfactory cosmetic result. The length of times since operation in these three cases was four months, two years and four and one half years respectively.

There was no evidence of cyst formation from portions of the epidermis incompletely removed from the dermis, or from hair follicles, sebaceous glands or sweat glands in the implanted dermal graft.

The fourth case was an extreme recession of the eye socket repaired by inserting a free dermal graft from the thigh into the socket. This procedure brought the socket forward so that the patient was able successfully to wear an artificial eye.

PARTIAL RESTORATION OF THE LOWER EYELID

ARTHUR E. SHERMAN, M.D.
East Orange, N. J.

Case # 1: White male of 59 years. Clinical diagnosis: Basal-celled epithelioma of inner third of left lower lid. Present two years. Excision and repair February 1935 by sliding flap from temporal side, similar to Dr. Wheeler's repair of coloboma of lid. Tension is carried by the temporal sutures so that lid flap lies in place without tension. In this case an anchor suture was passed through the internal canthal ligament. If growth were situated further temporally, junction best made by Dr. Wheeler's halving operation. If necessary, at a second operation the fissure could be shortened by a lateral tarsorrhaphy, with transplantation

of cilia from upper to lower lid. This was not necessary in this case. Patient presented, showing very satisfactory result.

Case # 2: White male of 45 years. Clinical diagnosis: Flat papilloma of lid margin. Duration 3 months. Similar growth at same site had been removed two years previously by electric needle. Excision of full thickness of lid at side of growth December 1934 and repair by modified Wheeler halving operation. Lateral canthotomy to relieve tension at junction. Patient presented, showing very satisfactory result.

TYPES OF FACIAL REPAIR

JACQUES W. MALINIAK, M.D.
New York, N. Y.

Case I.

Partial loss of cheek following removal of lower jaw for osteomyelitis in a man of sixty. Defect extended horizontally from the left commissure toward the angle of the mandible and was about four inches in length and two inches in width.

Reconstruction consisted in providing the buccal lining by a flap from upper cheek and skin covering by rotating skin from neck and upper part of cheek following extensive undermining. In spite of advanced age of the patient reconstruction was completed in one stage.

Case II.

Paraffinoma of nose involving the skin and cartilages and causing pronounced shrinking of the nose in a woman of thirty-one. The paraffin had been injected about ten years previously.

Except for redness of skin the paraffin remained latent for eight years following injection. At this time a small whitish induration appeared in the upper third of nasal bridge, slowly increasing in size. Reconstruction consisted in wide excision of the paraffinized skin of the nasal dorsum together with the involved subcutaneous structures. The raw surface was temporarily covered by a thin graft. In a second stage the Thiersch graft was removed and the nasal covering provided by a pedicle forehead flap. The depressed bridge was raised by a rib cartilage graft.

Case III.

Extensive third degree burn occupying two-thirds of the neck and lower face in a girl seven years old. Several unsuccessful attempts were made elsewhere to eliminate the thick scar strands extending from chin to chest through excision and Thiersch grafting. In spite of the short space of time in two years the thick cicatricial bands caused a conspicuous receding of the chin by traction. Repair consisted in transferring a tubed pedicle flap from lower back and chest in two steps and provided a very satisfactory matching of color and texture of the skin.

Case IV.

S. S. Aged twenty-four. Third degree para-orbital burn caused by fall on a radiator. Case seen four years after accident. Deformity consisted in partial loss of upper and lower eyelids with adhesions in the external canthus. The burn scar extended in the right temporal area and cheek toward the hairline. Repair consisted in providing a retro-auricular graft for the restoration of upper and lower eyelids. The defects of cheek and temple following excision of the extensive scar were repaired in two stages by rotating the adjoining skin of forehead and cheek following extensive undermining. The interesting points in this case are the fact that any free grafting of skin which does not match that of the face was avoided and an extensive area repaired by rotating the forehead and cheek skin on a wide pedicle, thus greatly increasing the cosmetic end result.

FORMATION OF THE DERMAL GRAFT

C. R. STRAATSMA, M.D.
New York, N. Y.

Name: B. R.

Chief Complaint: Sunken nose, depression of the forehead.

Present Illness: Patient was operated on for septal abscess and purulent infection of the frontal and ethmoidal sinuses in the first part of February, 1931. After operation the infection cleared up, leaving patient with her present deformity.

Diagnosis: 1. Saddle nose due to loss of eptum and widening of the nasal bony processes.

2. Partial loss of frontal ridge.
3. Scars of nose.

Operation: On November 4, 1932. At this time rib cartilage was removed from the

chest and stored subcutaneously in the upper part of the chest incision. A proper sized dermal graft was taken from the same chest incision and after undermining the depressed area of the forehead the dermal graft was inserted and the incision closed. Patient discharged from hospital after four days with all incisions healed by first intention. No suppuration.

Operation: On January 11, 1933. Second stage of operation was performed. At this time the nasal processes were refractured and pushed in to narrow the nose. The previously stored rib cartilage was removed from the chest and inserted into the nose after the skin had been undermined and loosened. Patient discharged after four days.

January 1936: Result after three years entirely satisfactory.

News and Notes

Resolution Recommending the Appropriation of Adequate Funds for the Maintenance and Growth of the Army Medical Library's Book Collection and Index-catalogue.

The Medical Library Association, comprising two hundred of the medical libraries of the United States and Canada, assembled in its thirty-eight annual session in St. Paul, June 22, 1936, notes with pleasure and pride the appearance of volume one of the Fourth Series of the *Index-catalogue* of the Library of the Surgeon-General's Office, United States Army (Army Medical Library). The Association records with satisfaction the abbreviations and changes in composition in this new volume effecting a saving of twenty per cent. in space with accompanying reduction in cost.

After a delay of three years during which no volumes of this *Catalogue* were printed, the appearance of this first volume of the Fourth series gives renewed assurance of the continuation of this publication, which together with the Army Medical Library, is considered the outstanding contribution which our country and its Government have made to medical knowledge, and

WHEREAS, The value and usefulness of the *Index-catalogue* is dependent upon the completeness of the files of medical publications contained in the Library of the Surgeon-General's Office—a public, national, medical library, the greatest in the world, serving in its present form of administration with satisfaction the medical profession and the medical libraries of our country, and

WHEREAS, In recent years the annual appropriation of the Congress has been wholly inadequate to provide sufficient funds to acquire the current medical books and periodicals issued throughout the world, so that they might be available for use throughout the country and for inclusion in the *Index-catalogue*,

THEREFORE BE IT RESOLVED, That the Medical Library Association urges the Congress to appropriate annually to the Library of the Surgeon-General's Office an adequate sum for current medical books and periodicals and for the purchase of back publications lost during those recent years when the amount granted was grossly inadequate, thus depreciating the completeness and usefulness of the Library's collection; and an additional sufficient sum annually, for as many years as may be required, in order to make for the greatest possible completeness of the collection and its *Catalogue;* and

BE IT FURTHER RESOLVED, That a sum be appropriated annually to defray the cost of printing regularly each year not less than one volume of the *Index-catalogue*, and

BE IT FURTHER RESOLVED, That a copy of these resolutions be spread upon the minutes of the annual meeting of this Association and sent to the President of the United States, the presiding officer of both houses of Congress, the Secretary of War, the Surgeon-General of the Army, and to the national, state, and other medical periodicals with a request for publication, and to the members of this Association, urging the organization of which they are a part and all other medical associations and institutions to adopt similar resolutions to be sent to their local members of Congress requesting their support of these measures.

From the Bulletin of the Medical Library Association, vol. 25, No. 1, p. 12, September, 1936. Minutes of the Thirty-Eighth Annual Meeting, Session of June 22, 1936. See also editorial in this issue.

Cancer

IV—The Pituitary Body

—Continued from page 541

than the tumors in the control animals that had not had the pituitary body removed.

Bischoff, Maxwell and Ullmann (2) submitted rats to irradiation of the pituitary body for the purpose of observing the influence of such treatment on the growth of transplanted tumors. They found that sublethal doses of irradiation of the pituitary body, which produced a temporary cessation of growth, significantly retarded the growth rate of rat sarcoma R 10, rat carcinoma 256 and a spontaneous mammary mouse carcinoma, if the tumor appeared at the period of maximum retardation of the body weight.

In the experiments with rat carcinoma 256, simultaneous irradiation and the injection of pituitary extracts with standardized growth producing powers, failed to retard the growth of the transplants. In older rats dosage with standardized growth-producing preparations of the pituitary body significantly accelerated the rate of growth of carcinoma 256. In younger animals and in animals with transplanted mouse sarcoma 180 and rat sarcoma 10, the effect was less significant.

Attempts to abolish the function of the anterior lobe of the pituitary body of rats or of mice by means of irradiation were unsuccessful.

Franseen and McTiernan (10) have found no significant difference in the metabolism of isolated liver or of Walker carcinoma tissue between that obtained from normal and that obtained from hypophysectomized rats.

Zondek (21) states that the administration of follicular hormone (estrin) over a long period of time inhibits the function of the anterior lobe of the pituitary body so that the growth hormone becomes inactive. In male rats the dysfunctioning pituitary bodies enlarge and may reach as much as four times their normal weight. He found that the pituitary bodies of female rabbits failed to hypertrophy after prolonged administration of folliculin.

Bioassay

Lewis and Geschickter (15) found 60,000 rat units of gonadotropic hormone per kilo in a fibromyxoma of the breast. In another woman with a fibroadenoma of the breast 2,500 rat units per kilo were recovered. In thirteen patients with carcinoma of the breast, one, aged 32 years, with a grade IV carcinoma, gave 7,000 rat units of prolan (gonadotropic hormone) per kilo. A similar amount was recovered from a woman with a papillary breast carcinoma, no age given.

In three cases of uterine myomata the gonadotropic hormone was recovered in amounts varying from 4,500 to 11,000 rat units per kilo. In eight cases of bone tumors, two of irradiated giant cell tumor, three of nonirradiated giant cell tumor, one each of irradiated sclerosing osteogenic sarcoma, osteolytic sarcoma, and osteochondroma, growth hormone was recovered in one and was negative in one and the gonadotropic hormone was recovered in one.

The authors state that no conclusions are to be drawn from the reported results concerning the casual relationship between the hormones and tumor formation. The assays are merely recorded as facts. "The presence of these endocrine substances in new growths would seem, however, to have significance in the physiology of the growth and to explain more satisfactorily than any theory yet advanced why tissues in a new growth reproduce themselves locally and in metastases."

Summary

It appears that the symptomatology of both benign and malignant tumors of the pituitary body is identical.

Three observers found no influence on the growth of malignant tumors in animals following the injection of prolan or of an extract of the whole pituitary body. One writer found that an aqueous extract of the whole pituitary body stimulated the growth of mouse melanoma and of Sugiura rat sarcoma; but had no action on the growth of six other malignant tumors.

One writer treated inoperable carcinoma of the female genitalia with prolan, combined with irradiation, and reported that the patients were "much improved." It is quite likely that the improvement was the result of the irradiation.

Hypophysectomy appears to retard the development of experimentally produced malignant tumors, and to lessen the num-

—Concluded on page 568

Contemporary Progress

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Neurology

Chemoprophylaxis of Poliomyelitis

● E. W. SCHULTZ and L. P. GEBHARDT *(California and Western Medicine,* 45:138-140, August, 1936), report experiments on monkeys with the use of various chemical solutions for nasal irrigation in the prevention of poliomyelitis after intranasal instillation of the virus. While several of the substances tested protected the animals against one or more inoculations of the virus at varying periods after treatment, the protected animals would eventually develop the disease unless chemical treatment was repeated, if inoculations were continued for a sufficiently long period of time. It is evident, therefore, if chemical treatment is to be employed for the prevention of poliomyelitis during an epidemic, treatments must be repeated at intervals. While several of the substances tested were "more or less effective" in protecting monkeys from poliomyelitis, the authors consider that 1 per cent picric acid in physiological saline is the most suitable for use in human beings, as its effectiveness was definitely established in the animal experiments, and it is also "essentially harmless and comparatively non-irritating." They suggest that the solution be applied with an atomizer for three successive (or alternate) days, and then once a week or every ten days during the epidemic. As the solution must be applied thoroughly to the olfactory area in order to be an effective prophylactic against the poliomyelitis virus, it is suggested that the treatment be carried out under the supervision of a competent nose and throat specialist, who would be able to determine any anatomic conditions that might interfere with obtaining such a thorough application.

COMMENT

A step in the right direction. The reviewer has already made a note of this medication to use at the appropriate time. Its successful use in the case of the monkey is sufficient recommendation. We have to admit that once the "polio" virus starts to work on an individual its future course in that individual is virtually beyond the control of a physician. We attempt to modify its course by using "convalescent serum," spinal drainage, and hypertonic solutions, hoping in each case that the gray nerve cell (neurone) impairment and subsequent muscle damage will not be too great. Consequently, as long as we can not, at the present time, induce an immunity to this disease, we feel that the use of the above medication is justified.
H. R. M.

Physiological Effects Of Benzedrine

● A. MYERSON, J. LOMAN and W. DAMESHEK *(American Journal of Medical Science,* 192:560-574, October, 1936) report a study on benzedrine in patients at the Boston State Hospital. Most of the patients utilized for these experiments were "passive, submissive cases of dementia praecox, who lay perfectly quiet throughout the entire procedure and whose general physical and physiological states were known to be normal." It was found

that benzedrine, whether given by mouth or subcutaneously, has "a striking and prolonged effect" in raising the blood pressure, and a less marked effect on the pressure of the cerebrospinal fluid. It also increases both the red and white cell count, this action probably being due to vasoconstriction of the spleen and "other reservoirs of blood cells," which forces an increased number of cells into the peripheral blood. When used with acetyl-beta-methyl-cholin (mecholyl), a parasympathetic stimulant, the effect of the latter was at first evident in a lowering of the blood pressure, which was followed by an increase in blood pressure due to the more prolonged action of benzedrine. When benzedrine is given with atropine (which paralyzes the parasympathetic) the rise in blood pressure is often "extreme." When given with sodium amytal, benzedrine not only diminishes the blood pressure lowering effect of this drug, but also shortens the period of narcosis. In the subjects observed in this study, there was no apparent change in the mental reactions, but in other studies the authors have found that benzedrine relieves the sensation of fatigue and mental depression of a mild type. If benzedrine is taken a few hours before bedtime, it prevents sleep; and Prinzmetal and Bloomberg have observed that it relieves narcolepsy. It evidently has a central stimulating effect, as well as its action as a sympathetic stimulant. The effects of the combined administration of benzedrine with other drugs as observed in these studies suggest that it "may be possible to equilibrate sympathetic and parasympathetic drugs against each other, and thus obtain enhanced effects." Because of its action on the blood pressure, it would appear to be indicated to combat an expected fall in blood pressure as in anesthesia, or to raise blood pressure in cases of shock and other conditions of peripheral circulatory failure. Because of its central stimulating action it may be used in the psychoneuroses and in fatigue states, as well as in the treatment of narcolepsy. The use of benzedrine in persons with hypertension or severe cardiovascular disease "is probably contra-indicated."

COMMENT

Drugs which have a specific effect on the autonomic nervous system are having an increasing use in the neurologic field. The commentator has had insufficient experience with the above medication, since its introduction, to warrant an opinion. However, in view of the claimed benefits noted, such as mild relief of depression, relief of fatigue, and reduction of the ill effects of at least one sedative through its tendency to raise the blood pressure, it deserves a thorough clinical trial.

H. R. M.

Glioblastoma; A Point of View Concerning Treatment

● H. G. McKENZIE *(Archives of Neurology and Psychiatry,* 36:542-546, September, 1936) notes that a few years ago he was of the opinion that operation was not indicated in glioblastoma, when the diagnosis was definitely established, but experience has led him to change this view. He has found that the usual decompression operation in these cases gives but very temporary relief, and does "little but prolong a useless existence." In certain cases of glioblastoma operation should not be considered, except "an exploratory burr hole" to establish diagnosis, but in most cases, the author believes, operation is indicated to remove sufficient tissue to relieve the impaired circulation of the brain. As a rule a mass of tumor and overlying brain tissue "approximately the size of a small orange" is removed, which relieves the tension, so that the brain tends to drop away from the dura. This may be described as "an internal decompression." Following an operation of this type, the patient with a glioblastoma experiences a real relief for several months and is able to carry on his own usual activities, but life is not prolonged when symptoms recur and "life becomes a burden," as it is with an external decompression. In other more benign types of tumor, as an astrocytoma, external decompression without resection is often the procedure of choice, giving relief for long periods of time.

Vasomotor Disturbances and Edema Associated with Cerebral Hemorrhage

● L. B. ELLIS and SOMA WEISS *(Archives of Neurology and Psychiatry,* 36:462-372, August, 1936) report a study of the peripheral blood flow in the normal and paralyzed extremities in 35 cases of hemiplegia due to cerebral hemorrhage.

The estimation of blood flow was made by determining the difference in the oxygen content between arterial blood and blood from the antecubital and femoral veins. It was found that the blood flow in the paralyzed arm was constantly greater than in the normal arm; the blood flow in the paralyzed leg was frequently, but not constantly, greater than in the normal leg. These differences in the blood flow were independent of the duration or extent of the paralysis, the condition of the muscular tonus, or the blood pressure. The temperature of the skin in the paralyzed arm was higher than that of the normal arm in 5 out of 7 patients, and higher over the paralyzed leg than in the normal leg in 2 cases. The authors conclude from their study of these cases that the increase in blood flow in the paralyzed extremities in cerebral hemorrhage is "due to a vasodilatation involving the arteries and arterioles, resulting from altered vasomotor reflexes of cerebral origin." In human beings, the evidence indicates that the cortical control of the vasomotor mechanism is predominantly vasoconstrictor; destruction of this control by a lesion of the cortex results in contralateral vasodilatation, as shown not only in the authors' cases reported, but also by the findings of other investigators. Edema was noted in the paralyzed hand in 13 of the 16 cases; increase in capillary pressure due to arteriole dilatation appears to be one factor in the causation of this edema.

A Common Lesion of the Cervical Spine Responsible for Segmental Neuritis

● E. L. TURNER and ALBERT OPPENHEIMER *(Annals of Internal Medicine,* 10:4271440, October, 1936) report a study of 50 cases in which the chief symptom was pain in some part of the shoulder girdle, arm, hand, back, precordium or neck. A few also complained of muscular weakness or inability to perform certain normal movements of the upper extremity. The pain varied in type and in degree in these cases. Some patients complained only of paresthesias, but others had severe radiating pains. The pain was usually unilateral, although in several cases it had shifted from one upper extremity to the other after months or years. Most of these patients had been suffering for a long period and had been subjected to various treatments, including physiotherapy, without relief. Most of the patients were unable to elevate the hand above the head in the position of abduction of the arm "as in the Fascist salute"; and several complained of difficulty in writing. Roentgen examination of the spine showed one characteristic finding in all these cases—a narrowing of one or more of the intervertebral spaces in the cervical spine. This narrowing was found whether there were bone changes of the hypertrophic or rheumatoid type or not; some of the patients showed no actual bone changes. By a special technique developed by one of the authors (Oppenheimer) it was also possible to show roentgenologically an accompanying narrowing of the intervertebral foramen. In the cases reported the middle and lower cervical regions were most commonly involved, and this explains the frequency of shoulder pain, as the fourth cervical segment supplies the sensory innervation over the top of the shoulder, and the fifth cervical the sensory innervation of the outer surface of the upper arm. Without examination of the cervical spine the shoulder pains may be wrongly attributed to arthritis, or in older patients, to cardiac disease. Some of these patients were markedly relieved by neck traction; Hanflig's technique employing a Sayres sling suspension with block and tackle arrangement was found to be the most satisfactory method. Manual traction and manipulation also give good results, although "exceedingly strenuous exercise for the manipulator." In some cases relief was obtained by ultrashort wave therapy over the cervical spine. Especially if the pain was aggravated on walking, the use of shoes with soft rubber soles and heels was of aid.

Comment

To the neurologist changes in the cervical spine are recognized as a direct cause or an important associated factor in the so-called neuritic pains about the neck, shoulder and arm. To confirm our suspicion frequent use of the x-ray is necessary. In considering pain as a complaint one trained in neurologic methods and in a careful neurologic systematic examination, reasoning as to a probable cause, eliminates factors first within the nervous system and then proceeds out to the skin. A neurologist walks up and down the tracts and pathways of the brain and

spinal cord, and out along the peripheral nerves. Bony changes in the spine serve as a frequent reason for a neurologic opinion. It is for this reason that the findings noted in this paper are not to be overlooked by one performing a careful neurologic examination. We have obtained our best recent results by the use of the ultratherm.

H. R. M.

●

Physical Therapy

Anemias Following Roentgen Irradiation of the Entire Body

● C. AUBERTIN *(Presse médicale, 44: 1321-1323, Aug. 19, 1936)* warns against the indiscriminate use of Roentgen irradiation of the entire body in the treatment of diseases of the blood and blood forming organs. (See abstract and comment in this section in the *Medical Times*, Sept. 1936, p. 376.) He believes it is indicated in cases of leukemia and Hodgkin's disease only if the spleen and the glands are not enlarged, but the blood count and the symptoms indicate that the disease is progressing or recurring in spite of local radiotherapy. But even in such cases "total roentgenotherapy" must be employed with care and in doses much less than for deep local roentgenotherapy. The author reports 2 cases, one of Hodgkin's disease and one of myeloid leukemia, in which roentgen irradiation of the entire body was given after local irradiation had failed to relieve the patient's condition. This procedure was followed by a severe anemia of the aplastic type, with hemorrhagic symptoms in one instance, from which the patients did not recover. The author concludes that irradiation of the entire body involves irradiation of normal portions of the hematopoietic apparatus and also of the total circulating blood, and this is a definite danger to the red cells and red cell formation, which may result in anemia. In cases of leukemia or Hodgkin's disease where this method is theoretically indicated, a careful control of the blood count and especially of the red cell count is necessary.

COMMENT

Everyone knows that the x-ray is a two-edged sword and sometimes, in the course of treatment for local effects, general deleterious effects are encountered. There is no reason to expect every part of the human body to act in the same manner in response to a given dose of x-ray.

N. E. T.

A Simple Heat Lamp

● F. H. KRUSEN *(Journal of the American Medical Association, 107:780, Sept. 5, 1936)* notes that the heat element used in household heaters or a luminous lamp is as effective as an infra-red unit. The therapeutic lamp requires a wide reflector to concentrate the heat at the area to be treated, not to diffuse it. The author describes a heat lamp which consists of a simple cup-shaped reflector, attached to a small clamp by which it may be fastened to a chair or bed. In this reflector a simple heat unit such as is used in ordinary household heaters is used interchangeably with a 250-watt or 500-watt tungsten or carbon filament luminous heat bulb. The luminous lamp produces heat radiation which penetrates to a greater depth than radiation from an infra-red unit, producing hyperemia, while the infra-red heat element, penetrating to less depth, produces more heat sensation on the surface when this is desired. The various parts of the lamp described are inexpensive, and can be assembled for a few dollars.

COMMENT

The drug and department stores are now selling room heaters for a dollar which are just as effective as any of the very expensive, fancy ones with which doctors used to decorate their offices. The main thing about the use of such applicators is to remember that "cooking" the skin does not increase the efficiency of the treatment.

N. E. T.

Physical Methods of Endocrinotherapy

● A. P. CAWADIAS *(British Medical Journal, 2:215-217, Aug. 1, 1936)* states that organotherapy, *i.e.*, the use of the glandular products themselves, "is not the whole of endocrinotherapy." The endocrine function can be stimulated or repressed by certain physical agents. These physical agents act through four different mechanisms: (1) By their effect on ionic

equilibrium of the cells; (2) by their effect on the endocrinotropic factors of the skin; (3) by their effect on the nervous reflex mechanism; and (4) by their direct effect on the glands themselves. In many instances more than one of these mechanisms is operative. The author has found that both the thyroid and the ovarian function can be stimulated by general ultra-violet irradiation. This can be explained by the ionic equilibrium mechanism, or in the case of the ovary by the nervous reflex mechanism, and also by the effect of the ultra-violet rays on the endocrinotropic factor of the skin. The author has found in his practice that in children with hypothyroidism, general ultra-violet irradiation is of definite benefit, and where the administration of thyroid was necessary, excessive doses could be reduced. General ultra-violet irradiation was also found to be of value in menstrual disturbances due to ovarian hypofunction, and in obesity of ovarian origin. The ovary can also be stimulated by local diathermy. The x-ray is the most powerful depressant agent for both the thyroid and the ovary. Certain forms of hydrotherapy also have "a soothing action" on the thyroid. The ultra-violet rays "act synergistically" with the parathyroids by stimulating the incretory functions of the skin in the production of viosterol, which influences calcium metabolism parallel with the parathyroid hormone. The value of ultra-violet radiation is well recognized in rickets; and it has also been used in spasmophilia and tetany; the author has found the ultra-violet rays of much value in a number of cases of nervous irritability, especially in children, probably associated with hypocalcemia. Stimulation of the pituitary by physical agents has not been proved, the author notes, but depression of pituitary function can be obtained by the x-rays, as shown by the good effects of roentgenotherapy in hyperpituitarism, Cushing's syndrome and pituitary headache.

COMMENT

Ever since ultra-violet light has been found to have general systemic effects investigators have tried to analyze the means by which these effects are obtained. Although this author attributes the action to some theoretical, specific effects, it will be difficult to prove that ultra-violet energy has any more than an oxidizing action upon such tissues as it can reach, namely, the superficial layers of the skin.

N. E. T.

Effective European Methods of Hydrotherapy Neglected in the United States

● C. I. SINGER *(Archives of Physical Therapy, 17:631-635, October, 1936)* notes that in Europe hydro-balneo-therapy is much more widely employed than electrotherapy, while in the United States the reverse is true. Much of European hydrotherapy has been, it is true, empirical, but many of the methods have "survived critical analysis of biological research." The most important survivals of "the acid test of modern biology" the author considers to be carbonic water baths, and pelotherapy, or mud treatments. Carbonic acid baths can be prepared artificially, by adding about 2 pounds of sodium bicarbonate, or of potassium bisulphate and sodium bicarbonate, to the bath water, followed by acetic or formic acid. Or an apparatus preparing CO_2 saturated water can be used, from which the saturated water is introduced into the bath water gradually without stirring. The effects of the natural and artificial carbonic acid baths are essentially the same. CO_2 baths are given at a relatively cool temperature, but the patient experiences a feeling of warmth, as the peripheral blood vessels —the capillary network and the deeper lying arterioles—dilate extensively; the arterioles of the kidneys also dilate as shown by the subsequent diuresis; simultaneous dilatation of the coronary vessels is to be presumed. While the relatively cool temperature of the CO_2 bath (not above 34° C.) increases the work of the heart, the specific CO_2 effects tend to "ease it up." CO_2 baths are indicated for all chronic cases of "mildly or moderately broken compensation of the myocardium," and also for cases of chronic pericarditis, aneurysms of "low progression" but not if severe or rapidly progressive, moderate hypertension and chronic pectoral angina. For a complete treatment CO_2 baths should be given every second or third day for eight to twelve weeks. Patients should rest a half to one hour after each bath.

The effects of mud baths or mud packs are due chiefly to their physical properties, which make them "a very effective form of conductive heat therapy" inducing a

deep passive hyperemia. With mud packs large surfaces and several joints can be treated at one time; higher temperatures can be endured than with hot water baths; as the specific heat of the mud is lower than that of water. There may also be some chemical absorption of sulphates from mineral mud, such as Fango, or chlorine from sea muds. Mud packs are indicated in all types of chronic arthritis, fibrositis, neuritis, after fractures, and in sport and industrial injuries. Both CO_2 baths and mud packs can be used in any hospital or institution, or in the physician's office with relatively little equipment—a definite advantage as many cardiac and rheumatic patients cannot afford to visit expensive health resorts.

COMMENT

The neglect to use well tried methods in hydrotherapy and pelotherapy in the United States is to be sincerely regretted. Polio cases can get some hydrogymnastics but thousands of cases of chronic arthritis could be definitely helped and made more comfortable if such baths and gymnastics were available.

It is quite "fashionable" to go to European cures for treatment but busy Americans can not be led to American cures to take their treatments seriously because the 'phone is too handy.

The rent of floor space and laundry bills operate as factors to keep American physicians from having hydrotherapeutic equipment in their offices.

N. E. T.

Fango Packs in Therapy

● Prior to the publication of Singer's article, H. J. BEHREND *(Archives of Physical Therapy, 17:501-503, August, 1936)* reported on the use of Fango mud packs at the Hospital for Joint Diseases of New York City, the first hospital in this country to use the method, Fango now being available here. The value of Fango packs has been scientifically demonstrated in European hospitals and clinics. The Fango pack has the thermo-mechanical effect of a warm wet compress; it adheres closely to the skin so that there is no possibility of interposition of air; the specific heat of the mud is high and its thermal conductivity low (as also stated by Singer) and thus the temperature is maintained at the desired level for a long time. Fango is "soft and velvety" to the skin and is easily removed by a warm spray. While its chief therapeutic action is "thermo-mechanical," there is also a chemical action due to its content of sulphur, iron, silicates and its radioactivity. Treatment with the Fango pack must be individualized for each patient by the physician as to temperature, duration of the treatment, after-treatment, etc. In the author's experience, at the Hospital, Fango packs have proved of definite value in all types of arthritis, in the after-treatment of traumatic bone and joint diseases, for the relief of congestion in pelvic diseases in women and in orchitis and epididymitis in men.

COMMENT

Fango mud has always been held in good esteem by the physicians who have used it. It is, however, no cure-all and is only another method of conveniently applying heat in the general treatment of many chronic diseases.

N. E. T.

Wavelength and Therapeutic Effect

● H. F. WOLF *(Archives of Physical Therapy, 17:583-586, September, 1936)* notes that there has been considerable controversy as to the effects of short wave diathermy, but the general consensus of opinion in the United States is that the short waves have no specific effect aside from their production of heat. The author has treated several cases with similar arthritic lesions in both hands, using a short wave apparatus for one hand and a longer wave for the other, producing the same heat sensation in each hand. The immediate results obtained were identical in the two hands, irrespective of the wave length employed. These experiments convinced the author in his opinion that the different wavelengths have no specific effects, and that their therapeutic action depends entirely upon the degree of heat produced in the tissues.

COMMENT

The non-specificity of wave length in so-called short wave treatments has long been the contention of this reviewer. It is gratifying to see some of the authors coming around to this point of view.

N. E. T.

Public Health
Industrial Medicine and Social Hygiene

Multiple Specimens for Central Laboratory Diagnosis of Enteric Infections

● M. H. McCRADY and his associates in the Bureau of Health of the Province of Quebec, Canada (*Canadian Public Health Journal, 27:439-444, September, 1936*), report that since 1931 the Bureau has distributed a new outfit to physicians for sending in multiple specimens for the diagnosis of enteric fever. This outfit contains three vials of about 8 cc. capacity in one mailing outfit. One of the vials (empty) is for blood for the agglutination test; one, containing glycerine and saline, for feces; and the third, also containing glycerine and saline, is for blood or for urine for culture. Since these outfits were distributed the number of specimens sent in to the Bureau for the agglutination (Widal) test has varied but little from year to year, but there has been a marked increase in the number of liquid blood samples, replacing the unsatisfactory dried blood specimens. But the number of blood, feces and urine samples for culture has shown a very marked increase. In the first ten months of 1935, 1,480 blood samples were submitted to the laboratory for agglutination tests, and 986, or 67 per cent, of these were accompanied by some other type of specimen. In 377 cases both feces and urine specimens were sent, and in 256 cases both feces and blood specimens. In these 986 cases the Widal test was positive in 442, or 45 per cent.; in 176 cases (18 per cent.) the organism was isolated from one or both of the other specimens; and in 33 cases (3.3 per cent.) the organism was isolated, although the Widal test was negative. The most important practical result, the authors consider, is that in 176 of the 986 cases, the multiple specimens enabled the laboratory to report to the physician the organism "very probably responsible" for his patient's illness upon examination of the first specimens submitted. The feces samples were chiefly responsible for this result, being positive in 147 cases. From the public health standpoint, the authors maintain that "the early and comparatively sure diagnosis" made possible by multiple specimens "is of inestimable value," and well warrants "the effort to provide facilities for simultaneous collection and transmission of such specimens."

COMMENT

More and more clever devices bring expert laboratory service to the aid of physicians in out of the way places. So rural practice becomes more scientific.

W. C.

Diphtheria Immunization with One Dose of Alum Precipitated Toxoid

●H. H. PANSING and R. SHAFFER (*American Journal of Public Health, 26:786-788, August, 1936*) report a study of the results of diphtheria immunization with one dose of alum precipitated toxoid among school children in Dayton, Ohio. In one group of 468 children found to be Schick positive on the preliminary test, 1 dose of 1 c.c. alum precipitated toxoid rendered the Schick reaction negative twenty-eight days later in 388 or 84 per cent of this group. In another group of 495 children with a positive Schick reaction, 86 per cent, were Schick negative sixty days after a single dose of the toxoid. Two years later 549 children who had been Schick negative after a single dose of alum precipitated toxoid were re-tested, and it was found that 57.8 per cent. (317) had reverted to Schick positive in this period. A small group of 105 children had been given a second dose of 1 c. c. of the toxoid sixty days after the first; two years later, 60 per cent showed a negative Schick reaction. These findings, the authors conclude, indicate that there is definite benefit to be derived from "secondary stimulus by means of multiple injections of antigen;" and that efforts to simplify the technique of diphtheria immunization by the use of "a single dose antigen" leads to "the sacrifice of a reasonable permanency of immunity for greater convenience of administration." Further laboratory and clinical research is necessary, they believe, to attain a method of more permanent protection against diphtheria.

Causation of Pneumonoconiosis

● PHILIP DRINKER (*Journal of Industrial Hygiene, 18:524-536, October, 1936*) in a discussion of the dusts that cause pneumonoconiosis comes to the conclusion that the silica dusts are the only ones

that produce definite pathological changes in the lungs. Coal dust and iron dust may produce pigmentation of the lungs, but no pathological changes unless combined with silica (as in coal-mine dust). It is well known that in silicotic lungs, dust particles under 3 microns are much more numerous than larger particles. This "size grading" of dust particles, in the author's opinion, is not done by the respiratory mechanism of the human body, as some have claimed, but is done in the air, for "it is physically impossible for any but particles below 5 microns to remain afloat in the air long enough to be carried about by gentle air currents and to be inhaled." In estimating dust exposures of workmen in different trades, the dust samples must be taken from the air and not from places where the dust has settled. Studies made by the U. S. Public Health Service and by the South African authorities indicate that permissible dust concentrations should not exceed 50 million particles per cubic foot for dusts with very low quartz content, or 5 million particles per cubic foot for pure quartz.

C. P. McCORD and his associates at the Industrial Health Conservancy Laboratories, Cincinnati, Ohio (*Surgery, Gynecology and Obstetrics, 63:129-137, August, 1936*), report the study of the reaction produced by different dusts by the introduction of the dust in suspension into the peritoneal cavity of animals (adult guinea-pigs) by "substantially the same technique" as described by Miller and Sayers (1924). The reactions produced are "indicative of, or at least suggestive of, expectable reactions in the lungs of human beings after effective exposure." In their experiments they found that the results obtained for all dusts were in keeping with the "accepted concepts" of the action of the various dusts on industrial workers. It was found that the silica dusts were the only ones producing a proliferative reaction with nodule formation. The admixture of alkalies with any form of silica caused marked increase in the number and extent of distribution of the silica nodules. This finding the authors regard as of special significance in view of the severe form of silicosis (often called "acute silicosis") associated with some industries such as the manufacture of abrasive soaps.

New and Unfamiliar Industrial Poisons

ALICE HAMILTON *(New England Journal of Medicine, 215:425-430, September 3, 1936)* notes several poisons that are relatively new as industrial poisons, or have been recently put to new uses which have increased their importance in industrial medicine. About these substances she states that "our knowledge is still very incomplete; it is like a picture puzzle which has been put together only in spots." Among the poisons discussed are certain chlorinated hydrocarbons (such as carbon tetrachloride) which are widely used as solvents and cleansers; carbon disulphide, "an old poison" formerly used in rubber manufacture, but now used in the manufacture of rayon; and a number of compounds that have damaging effects on the blood forming organs, of which benzol is the best known, but other benzene derivatives are also recognized as dangerous. Carbon disulphide, the author notes, is a specific poison to the central nervous system and may cause "psychoses of various kinds" as well as paralyses and a typical toxic amblyopia. In the examination by a physician of an industrial worker who presents "a puzzling array of symptoms," a careful analysis of the job at which he works is necessary not only for the diagnosis of the case, but also as adding a "valuable item to our scanty knowledge of industrial poisons."

COMMENT

The papers of Drs. Drinker, McCord, and Hamilton suggest to what a degree we are still at the beginning of our knowledge of industrial medicine.

W. C.

Practical Epidemiology of Syphilis

D. C. SMITH *(Journal of the American Medical Association, 107:784-786, Sept. 5, 1936)* notes that at present there are two practical epidemiological methods for discovering syphilitic patients: (1) Routine examinations, including serological tests, of population groups; and (2) tracing source cases and contacts of syphilitic patients. With mass examination, facilities for mass treatments must also be provided. This method is of special importance when the group examined and treated is a group of pregnant women in an obstetrical clinic, as this reduces the inci-

dence of congenital syphilis. At the University of Virginia Hospital, it has been the practice for several years to investigate epidemiologically all early and familial cases of syphilis and other cases where this procedure would seem to be warranted. The aim is to discover, and to bring to the hospital for examination and treatment, the person by whom the patient was infected, other persons exposed to infection from the same source, and persons in close contact with the patient following infection. It has been found that if patients are properly approached and assured that the information is confidential, almost all will cooperate. With this cooperation secured, patients are also much more apt to continue treatment regularly and for a sufficient period.

COMMENT

In certain communities where epidemiological work has been undertaken about 25% of all sources of infection of early syphillis has been found and brought under treatment.

W. C.

Laboratory Service in the Syphilis Control Program

● A. J. CASSELMAN (*Journal of the American Medical Association, 107:863-866, Sept. 12, 1936*) notes that darkfield examinations of the primary lesion of syphilis are most efficient if the patient can be sent to the laboratory of a diagnostician who has the proper equipment. For communities where this is not possible, the State laboratory should provide examination of specimens sent in capillary tubes. Diagnosis of syphilis in the primary stage is important for the treatment and prevention of the spread of the disease. Wassermann tests are done to best advantage in comparatively large laboratories; the Kahn or Kline test may be done in a small laboratory, and later checked by a Wassermann test at a central laboratory. The State laboratory can cooperate with local (public and private) laboratories by supplying weak standardized and dried syphilitic serum and sensitive antigens.

COMMENTS

Diagnostic service is the foundation stone of case finding.

W. C.

Ophthalmology

Roentgen-Ray Cataract

● P. J. LEINFELDER and H. D. KERR (*American Journal of Ophthalmology, 19: 739-755, September, 1936*) report a study of Roentgen-ray cataract. In experiments on rabbits one eye was irradiated with Roentgen rays in various dosages, corresponding to therapeutic dosage, while the other eye was completely protected by 2 mm. lead. Cataractous changes occurred in the lens in all the irradiated eyes; the lens opacity was at first peripheral, later involving the posterior capsular region in the form of punctate dots, and this in turn became a localized denser, stationary and scar-like opacity, which was not progressive. In 5 patients given Roentgen-ray therapy for malignant growths in the region of the eyes and followed up for twenty to thirty-eight months, 2 (both children) developed lens opacities. In one of these cases, opacities were present in both eyes, being progressive in the eye receiving the greater dosage; in the other case the lens opacity was not progressive and appeared to be diminishing six months after it was discoverd. In the other 3 cases—all adults in whom the lenses had been protected during the radiation treatment—no lens changes developed. Histological examination was made of the rabbits' eyes and of 4 human eyes removed at varying periods after Roentgen-ray treatment. This showed capsular swelling and degeneration of lens fibers in all the eyes studied; the earliest changes were seen at the equator, but later the damage extended to the posterior pole; the changes were greatest in this region in non-progressive cataract. Where the anterior subcapsular region and the cortex were damaged, the lesion was more severe, resulting in total opacity. From this study the authors conclude that "there is no doubt that Roentgen rays will cause cataractous changes in the lens, but whether or not progressive opacification will develop seems to depend upon a number of factors." Of these factors, dosage is most important; single doses of long rays are more injurious than repeated small doses of short rays. The location of the lesion treated in relation to the lens is also of importance; the danger is much reduced if the site of the lesion does not require full exposure of the eye, so that a

lead shield can be used for protection. It appears certain that "progressive cataract does not invariably follow exposure of the human lens to Roentgen rays."

COMMENT

Though the conclusive statement of this writer may be true, the risk is certainly not worthwhile in the majority of cases. A recent round-table discussion with a group of New York authorities brought out the point that radium and x-ray, when used for skin lesions and vernal catarrh, had caused lens changes in a very high percentage of cases.

J. N. E.

Inflammatory Disease in the Eye Caused by Gout

● D. J. WOOD (*British Journal of Ophthalmology, 20:510-519, September, 1936*) notes that gout is given very little attention in modern days, but he is convinced that gout or "the gouty diathesis" may be more frequent than has been supposed, and may be the cause of a peculiar inflammatory condition in the eye. In a recent article in the *American Journal of the Medical Sciences* of October, 1936, W. W. Herrick and T. L. Tyson also note that gout, although apparently "a forgotten disease" is of relatively frequent occurrence in their practice, and often a number of attacks have occurred without the correct diagnosis being made. In Wood's experience the eye symptoms may be present in recurrent attacks without the typical joint symptoms of gout. In Wood's cases the attack began with a sudden redness of the sclera that usually came on during the night—well described as episcleritis periodica fugax. The pain is not severe unless there is a complicating tenonitis with proptosis. When iritis develops it appears severe but is of relatively short duration and clears up with little residual damage. This suggests that "the irritant is not bacterial but possibly chemical." Vitreous opacities were present in all the 4 cases reported, and in 2 "were rather large rounded atoms" which were possibly urates, although this was not proven chemically. In one case in which vision was diminished following frequently repeated attacks, the slit lamp showed "acicular crystals in sheaves" on the cornea. The affected eye in this case was enucleated and examination showed that the lesions were most marked in the sclera, the choroid and the bacillary layer of the retina, while the iris had largely escaped damage. Numerous crystals of a brown tint were seen on the posterior surface of the sclera, but neither these crystals, nor those seen on the cornea with the slit lamp could be examined chemically, although the author says "it is not unreasonable to conclude" that they were urates. The author notes that the symptoms in these cases "correspond exactly" with those described by Jonathan Hutchinson and attributed by him to gout. In the two cases in which the uric acid of the blood was determined it was found to be high during attacks. In 3 cases the patient's diet and use of alcohol "were such as would naturally produce a gouty condition," and in one of these restriction of meat in the diet and stopping the use of beer prevented further recurrence. In the treatment of these cases, the author recommends restriction of diet, the administration of cinchophen or colchicum, and local applications of dionin, and when the iris is involved, atropine or hyoscine.

COMMENT

This review should stimulate medical history-taking in ophthalmological cases. Watch ears for tophi; keep in mind the dangers of modern specific therapy; emphasize colchicum medication and watch the blood chemistry.

J. N. E.

Use of Vasodilators in the Treatment Of Retrobulbar Neuritis

● W. F. DUGGAN (*Archives of Ophthalmology, 16:380-399, September, 1936*) found, as previously reported, that an intravenous injection of a 10 per cent. solution of sodium nitrite caused a rapid return of vision in tobacco amblyopia. He accordingly tried this remedy in other types of retrobulbar neuritis. In this article he reports 9 cases of retrobulbar neuritis of varying etiology treated by intravenous injection of sodium nitrite; in 2 cases a dosage of 0.04 gm. sodium nitrite was used for the first three injections; in all other injections the amount used was 0.1 gm. Of the 9 cases, 8 showed definite improvement in vision or a marked decrease in the size and/or density of the scotoma, or both. In 5 cases of acute involvement there was definite improve-

ment in visual acuity in six to twenty days from the day treatment was started, each patient receiving three to seven injections. In the cases of long standing involvement, the improvement in vision was less marked, and there was a moderate decrease in the size and density of the scotoma. In these cases the vasodilator therapy apparently improves the local circulation, in spite of permanent vascular changes that are undoubtedly present. In the acute cases the sudden and complete disappearance of a portion of or all of the scotoma indicates a sudden improvement in the circulation of the visual pathway, in some instances, a return to normal. If, in these cases, a permanent defect in the field remains, it is to be assumed that the arteriole or arterioles concerned have been permanently occluded by a thrombus. The author considers that the result of vasodilator therapy indicates that in many cases "retrobulbar neuritis" is not a true inflammation characterized by marked dilatation of the blood vessels with edema, but is primarily caused by vascular spasm. The confirmation of these results in a much larger series of cases is necessary, however, "before the hypothesis that a vascular spasm is the basic or primary cause can be accepted."

COMMENT

More data on this subject must be produced before we can arrive at definite conclusions.

J. N. E.

Contact Glass as a Therapeutic Agent in Corneal Ulcer

D. M. ROLETT *(American Journal of Ophthalmology, 19:888-890, August, 1936)* reports 2 cases of ulcer of the cornea treated with a contact glass filled with an antiseptic solution. The first case was one of serpiginous ulcer, and a protargol solution was employed; the second case was one of an ulcer involving almost the entire cornea of the left eye, due to lagophthalmos and keratitis neuroparalytica, in which Ringer's solution was used. In both cases, the lesion had failed to respond to treatment with the usual methods, but healed well under the contact glass treatment; in the second case this local treatment was supplemented by a diet rich in vitamins A and D. In using the contact glass, the author notes, "it is exceedingly important to see that the contact glass properly fits the cornea." In beginning the treatment, the cornea should be observed with the slit lamp after the patient has worn the contact glass for twenty to thirty minutes. Later the glass may be worn for hours at a time, but the condition of the sclera, limbus and cornea should be frequently inspected until healing is complete. The author is of the opinion that this new method of treatment should be more frequently used in corneal ulcer.

COMMENT

Two cases of ulcer so treated hardly warrant a report. The dangers of traumatism to an already infected eye—by the contact glass—have to be weighed against the advantage of continuous contact of the bacteriostatic medicament.

J. N. E.

Late Results in Operation for Congenital Cataract

● K. VON HOFE *(Archiv für Augenheilkunde, 110:34-38, September, 1936)* reports a follow-up study of patients operated for congenital cataract. Of 31 patients, 10 had been operated for unilateral cataract and 21 for bilateral cataract. Of 10 patients in whom only one eye was affected, the vision was not good in the operated eye; the other eye, however, had good or excellent vision; in 6 cases the lens of the unoperated eye was entirely normal and in the other 4 patients there was only a slight opacity, usually punctate, which did not interfere with vision. Four of the cases showed nystagmus; 2 of these patients were feeble minded, and one had developed an optic nerve atrophy. In the 21 cases in which both eyes had been operated for congenital cataract, 10 had good or excellent vision, 9 had moderately good vision, and in only 2 instances was the vision very poor; one of the latter showed microcornea and the other microphthalmos. Nystagmus, also congenital, was present in 7 cases. Five of these patients were feeble minded, and the author is of the opinion that the feeble mindedness which is associated with congenital cataract in a certain percentage of cases is responsible for the failure of some of these children to develop, rather than any serious visual defect. His own observations, as well as results reported by others, lead the author to conclude that, as far as vision is concerned, the majority of persons operated in childhood for bilateral cataract are entirely capable of carrying on any usual occupation.

Cancer

IV

The Pituitary Body

—*Concluded from page 556*

ber of takes in transplantation experiments.

Efforts to duplicate the effects of hypophysectomy by irradiation of the pituitary body do not seem to be effective.

Bioassay gives evidence that certain tumor tissues contain hormones that are known to be secreted by the cells of the pituitary body. This may be because the hormone is stored in the tumor tissue by absorption or by adsorption from the blood stream or because the metabolic activity of the tumor cells produces the hormone.

It appears that further studies of the relation between the growth hormone of the pituitary body and tumor formation are desirable.

The method of bioassay of tumor tissue appears to open a promising field for further study.

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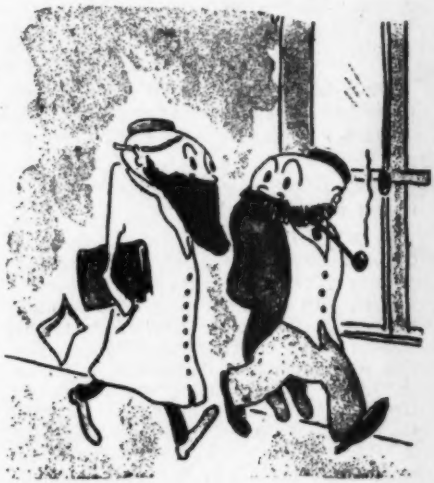
Sinus Symposium

The Patient with Sinus Disease

—*Concluded from page 528*

which the rhinologist labors. With this realization and understanding, those not practicing rhinology will, I hope, as was said at the beginning of this paper, cooperate in greater harmony with the rhinologist to the ultimate advantage of the patient.

789 St. Mark's Avenue.



Psychiatrists:

—"And your criminally insane patient?"

—"Oh! I should give a favorable prognosis. Last month he killed only three people."

(Soro, in *Marianne*, Paris)

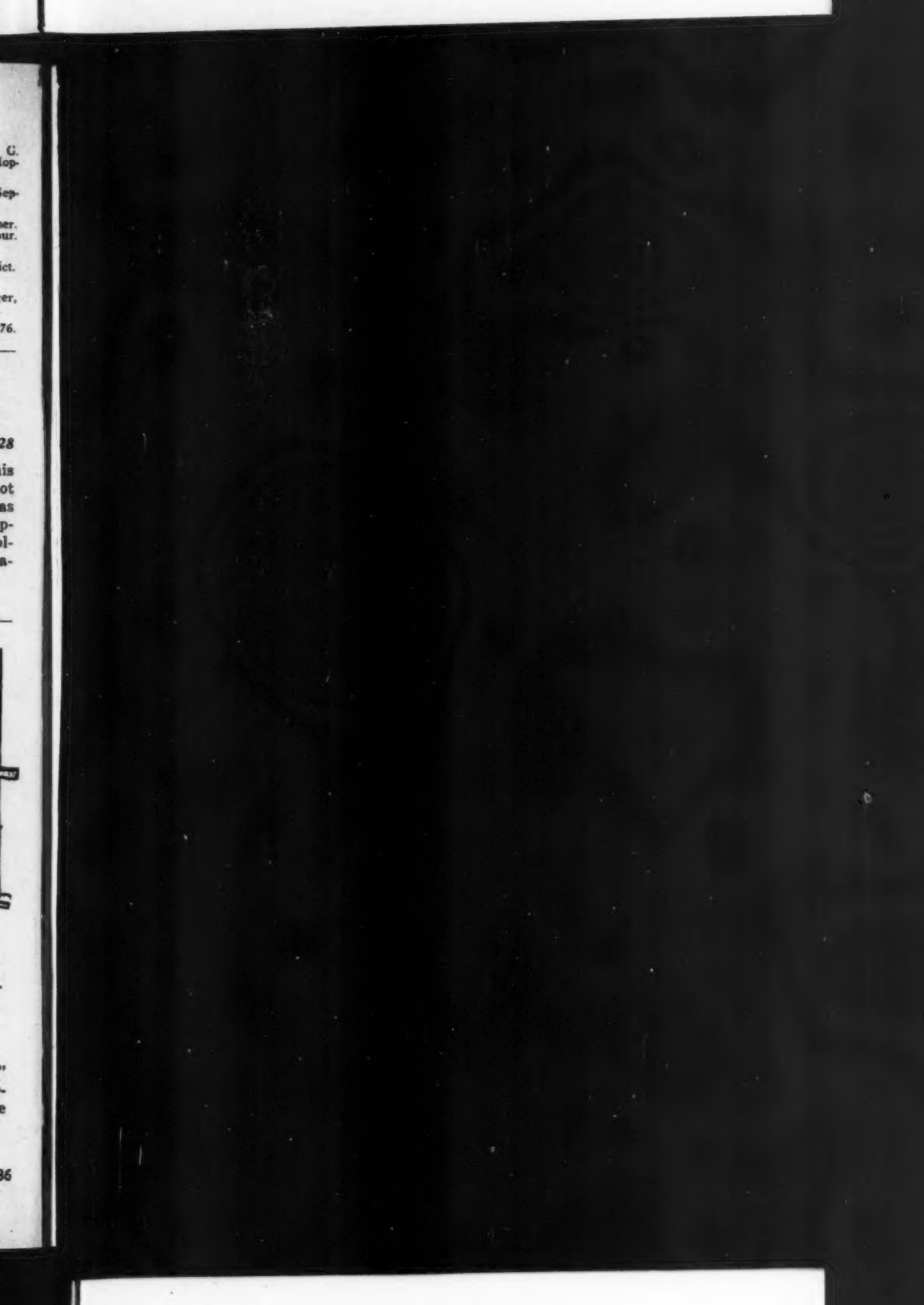


Fig. 1—Time 10:15

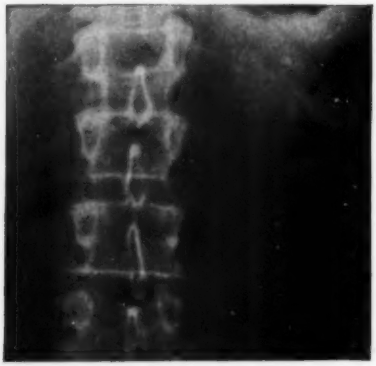


Fig. 2—Time 11:50

Rapid Disintegration

Clinical experience has shown that some forms of iron — especially Blaud pills — may pass through the entire digestive tract without disintegration.

The accompanying x-ray pictures show that ferrous sulfate in the form of **FEOSOL TABLETS** will disintegrate rapidly even in achlorhydria, where the absorption of reduced iron is questionable.

X-RAY REPORT

No. 41—White, male, 45. Absolutely no hydrochloric acid after histamine.

9:45—Six Feosol Tablets. *Fig. 1*—30 minutes later. Tablets can be seen clearly. *Fig. 2*—Two hours after ingestion. Tablets completely disintegrated.

FEOSOL TABLETS

THE STANDARD FORM OF IRON

Each tablet contains 3 grains ferrous sulfate exsiccated (approximately 65 mg. metallic iron).

OXO-ATE "B"

66% SAVING FOR THE ARTHRITIC

The prescription package of Oxo-ate "B" has been increased from 24 to 40 tablets. The price remains unchanged.

Eskay's Neuro Phosphates is of proven value in those clinical symptoms for which a tonic is usually prescribed.

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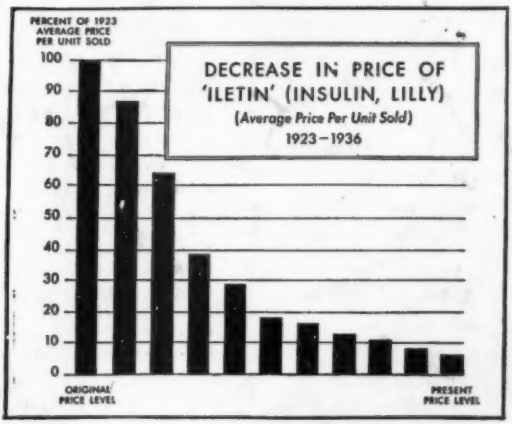
Makers of Medicinal Products



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The first Insulin commercially available in the United States
Time-Tried • Pure • Stable • Uniform

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